INVENTORY AND MONITORING

A. Fish Distributions

Fish presence/absence data were obtained from various inventories. Results and data sources (references) are displayed in Table 2-1. Bull trout distributions and site name locations are displayed on the maps in Figures 8a and 8b.

Table 2-1. Fish presence/absence data for inventory stations in the Jarbidge Basin.

Site Location - as documented in Figures 4a and 4b	Presence (Y) and Absence (N)						Source (see references)
	Bull Trout	Redband trout	Mountain Whitefish	Sculpin	Dace	Sucker	
Dave Creek - DC1	N	Y	N	N	N	N	Zoellick et.al. 1996
Dave Creek - DC2	N	Y	N	N	N	N	Zoellick et.al. 1996
Dave Creek - DC3	N	Y	N	N	N	N	Zoellick et.al. 1996
Dave Creek - DC4	Y	Y	N	N	N	N	Burton et.al. 2001
Dave Creek - DC5	Y	Y	N	N	N	N	Burton et.al. 2002
Dave Creek - FWS1							US F&WS - 2002
Dave Creek - FWS10	N						US F&WS - 2002
Dave Creek - FWS2	Y						US F&WS - 2002
Dave Creek - FWS3	Y						US F&WS - 2002
Dave Creek - FWS4	Y						US F&WS - 2002
Dave Creek - FWS5	Y						US F&WS - 2002
Dave Creek - FWS6							US F&WS - 2002
Dave Creek - FWS7							US F&WS - 2002
Dave Creek - FWS8	N						US F&WS - 2002
Dave Creek - FWS9	N						US F&WS - 2002
Deer Creek - DRC1	Y	Y					NDOW 2000
East Fork Jarbidge - IEF.1	N	Y	Y	Y	Y	Y	IDF&G 1993
East Fork Jarbidge - IEF2.4	N	Y	Y	Y	Y	Y	IDF&G 1993
East Fork Jarbidge - IEF4.1	N	Y	Y				IDF&G 1993
East Fork Jarbidge - EF0.6			Y	Y	Y	Y	Zoellick et.al. 1996
East Fork Jarbidge - EF1	N	Y	Y	Y	Y	N	Zoellick et.al. 1996
East Fork Jarbidge - EF10	N	Y	Y	N	N	N	Zoellick et.al. 1996
East Fork Jarbidge - EF2	N	Y	Y	Y	N	Y	Zoellick et.al. 1996
East Fork Jarbidge - EF3	N	Y	Y	Y	Y	Y	Zoellick et.al. 1996
East Fork Jarbidge - EF3.5		Y	N	Y	Y	N	Zoellick et.al. 1996
East Fork Jarbidge - EF4	N	Y	Y	Y	N	Y	Zoellick et.al. 1996
East Fork Jarbidge - EF4A	N	Y	Y	N	N	N	Zoellick et.al. 1996
East Fork Jarbidge - EF4B	N	Y	Y	Y	N	N	Zoellick et.al. 1996
East Fork Jarbidge - EF4C	N	Y	Y	N	N	N	Zoellick et.al. 1996
East Fork Jarbidge - EF5	N	Y	Y	N	Y	N	Zoellick et.al. 1996
East Fork Jarbidge - EF6	N	Y	Y	N	N	N	Zoellick et.al. 1996
East Fork Jarbidge - EF7	N	Y	N	N	N	N	Zoellick et.al. 1996
East Fork Jarbidge - EF8	N	Y	N	N	N	N	Zoellick et.al. 1996

Table 2-1. Fish presence/absence data for inventory stations in the Jarbidge Basin.

	Presence (Y) and Absence (N)						
East Fork Jarbidge - EF9	N	Y	Y	Y	N	N	Zoellick et.al. 1996
documented in Figures 4a and 4b	**Bull Trout**	**Redband trout**	**Mountain Whitefish**	**Sculpin**	**Dace**	**Sucker**	**(references)**
East Fork Jarbidge - IEF.6	N	Y	Y	Y	Y	Y	IDF&G 1993
East Fork Jarbidge - IEF1.8	N	Y	Y	Y	Y	Y	IDF&G 1993
East Fork Jarbidge - TRAP1	Y	Y	Y	Y	Y	Y	IDFG - 98&99
Jack Creek - JC1	Y	Y	Y	N	N	N	Zoellick et.al. 1996
Jarbidge River - IDJR1	N	N	Y				IDF&G 1993
Jarbidge River - IDJR20	N	Y	Y				IDF&G 1993
Jarbidge River - IDJR21	N	Y	Y				IDF&G 1993
Jarbidge River - IDJR22	N	Y	Y				IDF&G 1993
Jarbidge River - IDJR23	N	Y	Y				IDF&G 1993
Jarbidge River - IDJR24	N	Y	Y				IDF&G 1993
Jarbidge River - IDJR25	N	Y	Y				IDF&G 1993
Jarbidge River - IDJR3	N	Y	Y				IDF&G 1993
Jarbidge River - IDJR5	N	Y	Y				IDF&G 1993
Jarbidge River - IDJR7	N	Y	Y				IDF&G 1993
Jarbidge River - JR1	N	Y	Y	Y	Y	Y	Zoellick et.al. 1996
Jarbidge River - JR2	N	Y	Y	N	Y	Y	Zoellick et.al. 1996
Jarbidge River - JR3	N	Y	Y	N	Y	Y	Zoellick et.al. 1996
Jarbidge River - JR4	N	Y	Y	N	Y	N	Zoellick et.al. 1996
Jarbidge River - JR5	N	Y	Y	N	Y	Y	Zoellick et.al. 1996
West Fork Jarbidge - IWF1.7	N	Y	Y	Y	Y	Y	IDF&G 1993
West Fork Jarbidge - IWF3.4	N	Y	Y	Y	Y	N	IDF&G 1993
West Fork Jarbidge - IWF.6	N	Y	Y	Y	Y	Y	IDF&G 1993
West Fork Jarbidge - TRAP2	Y	Y	Y	Y	Y	Y	IDFG - 98&99
West Fork Jarbidge - WF0.6			N	Y	Y	N	Zoellick et.al. 1996
West Fork Jarbidge -WF1	N	Y	N	N	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF10	N	Y	Y	N	Y	N	Zoellick et.al. 1996
West Fork Jarbidge -WF11	N	Y	Y	Y	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF12	N	Y	Y	N	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF13	N	Y	Y	N	Y	N	Zoellick et.al. 1996
West Fork Jarbidge -WF14	N	Y	Y	N	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF15	N	Y	Y	N	N	Y	Zoellick et.al. 1996
West Fork Jarbidge -WF2	N	Y	N	N	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF2A	N	Y	Y	N	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF3	N	Y	N	Y	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF3.4			N	Y	Y	N	Zoellick et.al. 1996
West Fork Jarbidge -WF4	N	Y	Y	Y	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF5	N	Y	Y	N	N	Y	Zoellick et.al. 1996
West Fork Jarbidge -WF5A	N	Y	Y	N	Y	Y	Zoellick et.al. 1996
West Fork Jarbidge -WF6	Y	Y	Y	Y	N	N	Zoellick et.al. 1996
West Fork Jarbidge -WF7	N	Y	Y	Y	Y	N	Zoellick et.al. 1996
West Fork Jarbidge -WF8	N	Y	N	Y	Y	N	Zoellick et.al. 1996
West Fork Jarbidge -WF9	N	Y	Y	N	N	N	Zoellick et.al. 1996

B. Bull Trout distribution

Fish surveys have not detected bull trout in the Jarbidge River downstream of the confluence between the East and West Forks. However, trapping on both forks near the confluence confirmed the presence of bull trout, likely migrants returning from summer rearing areas upstream. Therefore it is reasonable to assume that bull trout over-winter rearing occurs in the Jarbidge River downstream of East and West Forks. On public lands upstream of the confluence, bull trout have been observed in the East Fork Jarbidge River, West Fork Jarbidge River, Deer Creek, Jack Creek, and Dave Creek.

C. Bull Trout Habitat

Figures 8a and 8b display bull trout habitats as projected from presence-absence information and data on stream habitat conditions. Focal habitats represent those critical for bull trout spawning and early rearing. According to the literature summary (Appendix I), spawning occurs in streams colder than 10^{O}C, and early rearing in streams with mean maximum summer temperatures less than 12^{O}C. In the Jarbidge Basin, such temperatures are associated with streams mostly above 5500 feet elevation and with abundant natural shade (Table 2-2). Presence of bull trout above 5500 feet was used as the criteria to identify spawning habitats in Figure 8b. Focal habitats associated with public lands administered by BLM in the Jarbidge Basin include: Dave, Jack, and Deer Creeks.

Nodal habitats represent those used by bull trout for migration and adult and sub-adult rearing. As indicated in the literature summary, migratory bull trout rear in waters colder than 15^{O}C, thus limiting the time of year they occur in downstream river segments (below 5500 feet) to colder periods in fall, winter, and spring. Good Nodal habitats are represented by streams over 3 meters in width, abundant pool cover with depth greater than 1 meter, embeddedness less than 20%, and low levels of chemical contamination. Nodal habitats associated with public lands in the Jarbidge Basin include: Jarbidge River, EF Jarbidge River, WF Jarbidge River, and the lower portion of Dave Creek below 5500 feet elevation.

Adjunct habitats represent those where bull trout have not yet been observed, but habitats and connected to known bull trout nodal habitats, and habitat conditions are conducive to spawning and early rearing. Bull trout may enter such streams temporarily for thermal refuge or feeding. As bull trout populations increase in size, such streams are expected to be the first pioneered for re-colonization. Buck Creek is the only adjunct habitat associated with public lands in the Jarbidge Basin.

Habitat data in the Jarbidge Basin are summarized in Table 2. Habitat site locations are shown in Figure 9. The Jarbidge River, including the mainstem and both East and West Forks, is mostly riffle habitat although some reaches contain substantial amounts of pool. These waters range from 6 to 12 meters in width, one-tenth to about one-third meters in depth, and less than 10 percent fine sediment. The smaller Dave Creek, is only about 1.5 meters in width and contains much more pool. In the degraded reaches, Dave Creek is high in fine sediment (41%), but upstream of the impacted area, substrates are much cleaner (4% fines). A much higher gravel composition is also characteristic of Dave Creek substrates as compared with downstream big river substrates. Large woody debris was present in 12 of 17 pools in 2002. Overhanging vegetation was present in 11 of 17 pools, and under cut banks were present at 6 of 17 pools. Maximum pool depths were $\geq$ 0.5 meters on 7 of 17 pools in 2002. Pools in Dave Creek tended to be shallower closer to private land. Dave Creek is a bull trout spawning stream.

Buck Creek varies from 2 to 3 meters wide and has about 170.2 pools per mile. The 8 of 11 pools had depths ≥ 0.5 m deep. The average pool size was 2.9 by 3.4 meters. Large woody debris was present in only 1 of 11 pools, whereas, overhanging vegetation was present at 8 of 11 pools. Dominant substrate size was boulder/bedrock in 4 of 11 pools, whereas, gravel and cobble were dominant 2 and 1 pools, respectively. The substrate was 50% or more embedded at 7 of 11 pools. The width/depth ratio was 11.8, which is a little higher than expected. Embeddedness values and width/depth ratio are likely impaired due to the close proximity of a gravel road and the fact that Buck Creek flows as a braided channel through a corral on private land. No habitat data have been collected specific to Deer or Jack Creek by BLM staff.

Environmental baseline habitat conditions are contained within the Effects Matrices developed for each group of actions addressed in this Biological Assessment in Appendix II.

Table 2. Habitat characteristics in the Jarbidge Basin.

SITE*	%_Pools	%_Riffles	%_Fines	%_Gravel	Mean_Width	Mean_dep	Pool_dep
IDJR1	0	80	7	51	11	0.13	
IDJR3	17	83	5	30	9.7	0.14	
IDJR5	33	93	17	22	7.8	0.31	
IDJR7	0	100	1	13	10.3	0.17	
IDJR25	22	78	10	17	9.1	0.14	
IDJR24	50	50	6	28	9.1	0.23	
IDJR23	0	100	3	18	9	0.11	
IDJR22	33	67	10	14	9.6	0.16	
IDJR21	80	20	16	21	11.8	0.18	
IDJR20	30	70	6	11	9.3	0.23	
IEF.1	9	91	6	16	8.5	0.2	
IEF.6	11	89	3	16	6.6	0.24	
IEF1.8	0	100	12	30	9.1	0.07	
IEF2.4	22	78	11	15	7.4	0.14	
IEF4.1	0	100	5	24	6.5	0.12	
IWF.6	6	94	0	16	7.2	0.18	
IWF1.7	0	100	4	15	6.6	0.19	
IWF3.4	11	89	5	24	7.4	0.21	
DC1	35	65	41	50	1.3		0.17
DC2	39	61	41	34	1.5		0.2
DC3	34	66	4	83	1.6		0.26
TRAP1							
TRAP2							

* for locations, see map in Figure 9.

D. Riparian Condition

From the mid 1990's to 2000 the Jarbidge Field Office collected riparian condition data for streams in the field office area. Within the Jarbidge River watershed the majority of the streams were considered to be in proper functioning condition. The focus of riparian condition is bank stability and vegetation. Intermittent streams or reaches of streams were not classified.

The aquatic condition does not directly correspond to riparian condition. Stream segments on private or state land were not evaluated. Table 2-3 contains the miles of riparian condition for streams within the Jarbidge River watershed area. Portions of Columbet Creek and Dorsey Creek are dewatered on private land to irrigate crops. The road from Murphy Hot Spring to Jarbidge Nevada on portions of the East Fork and West Fork of the Jarbidge influences the floodplain, bank stability and vegetation.

Table 2-3. Miles of riparian condition for streams in the Jarbidge River watershed.

Stream Name	PFC	Functioning At Risk (FAR)			NF	Unknown
		Up	No Trend	Down		
Buck Creek	2.5 mi					
Columbet Creek	4.5 mi	1.6 mi		0.1 mi		
Cougar Creek			3.0 mi			14+ mi
Dave Creek	2.2 mi					
Deer Creek	0.9 mi					
Dorsey	1.8 mi					6.3 mi
East Fork Jarbidge	3.7 mi		4.0 mi			
Jack Creek	0.1 mi					
Jarbidge River	26.6 mi					
Sanovia						0.2 mi
West Fork Jarbidge			10.3 mi			

PFC = proper functioning condition; Functioning At Risk, Up = trend upward, No trend = no apparent trend, Down = trend down; NF = non functioning; Unknown = Not classified or not checked.

E. IIT Implementation Monitoring -

The consultation with the FWS for the continued implementation of the Jarbidge RMP, resulted in Jarbidge Field Office adopting INFISH standards for streams within the Jarbidge River watershed. The IIT Implementation monitoring protocol is being used to assess livestock grazing effects on streamside vegetation and associated stream channel condition**.** End-of-season residual stubble height is used as a monitoring tool that links annual effects of livestock grazing prescriptions to trends in aquatic habitat conditions.

Residual stubble height has been correlated with a number of parameters that are beneficial to salmonids on stream types that are dependent on herbaceous vegetation for streambank stability. Residual stubble height is a standard measure that can be aggregated across pastures for statistical comparisons. For INFISH the end-of-season stubble height standards are: greater than 6 inches for herbaceous hydric vegetation, and greater than 4 inches for non-hydric, grass-like vegetation.

Table 2-4 summarizes observed end-of-season stubble heights for stations in the Jarbidge Basin. Most sites met the stubble height standards of INFISH. Dave Creek did not meet either INFISH standard in 2001, and Columbet Creek has met INFISH standards only in 2001. IIT monitoring locations are shown in Figure 10.

Table 2-4. Stubble height data for stations in the Jarbidge Basin.				
STATION	**YEAR**	**STUBBLE HEIGHT - hydric (in)**	**STUBBLE HEIGHT - non hydric (in)**	**MEET STANDARD?**
Dave Creek	2000	>6 inches	>4	Yes
	2001	2	2	No
Dorsey Creek	2000	9	11	Yes
	2001	10	12	Yes
Jack Creek	2000	>6	>4	Yes
	2001	>6	>4	Yes
Columbet North	2000	2.2	1.7	No
	2001	6	5	Yes
	2002	3.5	3.5	No
Columbet South	2000	3.5	3	No
	2001	9	8	Yes

F. Water Temperature/Water Quality

Temperature data were collected by Werdon (personal communication) in Dave Creek, by Partridge and Warren (1998 and 1999) near the mouths of East Fork and West Fork Jarbidge River, by Partridge and Warren in 1992 on the mainstem Jarbidge River and in East and West Forks, and by Zoellick and others (1996) on the mainstem Jarbidge River, East and West Forks Jarbidge River, and upstream in Dave and Jack Creeks. Jarbidge Field Office (BLM) has been collecting water temperature data in Dave Creek, Buck, Creek, Jack Creek, Jim Bob Creek, East Fork Jarbidge (upstream of Murphy Hot Spring) and Jarbidge River near the mouth of Rattlesnake Draw. Locations of temperature stations are shown in Figure 11.

Jarbidge River: Maximum daily water temperatures in August of 1992 ranged from 15 to 26^{O}C. Likewise, Zoellick and others (1996) measured mean water temperatures during July snorkeling surveys at 14^{O}C. These temperatures were excessive for summer bull trout rearing, suggesting that use of this segment would likely be restricted to fall, winter, and spring.

West Fork Jarbidge River: Thermographs at the fish trap in lower West Fork were set up during the late summers of 1998 and 1999. Daily maximums regularly exceeded 15^{O}C from late July to about mid September, making spawning and rearing difficult if not impossible for bull trout in this reach. Jarbidge Field Office has collected water temperature data from 1998 to 2001 between June and October near the mouth of Rattlesnake Draw. The average 7 day maximum temperatures for 2001, 2000, 1999, and 1998 were 23.3^{O}C, 21.8^{O}C, 20.6^{O}C, and 19.3^{O}C, respectively. The average 7 day maximum temperatures usually occurred in August. Daily high water temperatures can exceed 20^{O}C from late June into September. Drought the past 2+ years likely contributed to the increasing water temperatures in 2000 and 2001. Data for 2002 were not included due to the temperature collecting apparatus being above the water line this summer. Dissolved oxygen levels recorded

between 1995 and 2001 ranged from 7.6 to 11.1 mg/l. Total dissolved solids averaged 0.036 g/l over a 6 year period in the West Fork Jarbidge.

East Fork Jarbidge River: Thermographs at the fish trap in lower West Fork were set up during the late summers of 1998 and 1999. Daily maximums regularly exceeded 15^{O}C from late August to about mid September, making spawning and rearing difficult if not impossible for bull trout in this reach. Data collected just upstream of Murphy Hot Springs between 1997 and 2001 showed that average 7 day maximum temperature exceeded 19^{O}C yearly. The average 7 day maximum temperatures for that time period were as follows: 1997 – 19.7^{O}C, 1998 – 19.5^{O}C, 1999 – 20.1^{O}C, 2000 – 24.2^{O}C and 2001 – 25.3^{O}C. The average 7 day maximum temperatures occurred in August each year. Data for 2002 were not included due to the temperature collecting apparatus being above the water line during part of the summer. Daily high water temperatures can exceed 20^{O}C from late June into September. Temperatures in the East Fork are slightly warmer than the West Fork Jarbidge. From 1996 through 2001 dissolved oxygen data were periodically collected. Dissolved oxygen has varied from 7.5 to 9.7 mg/l on these checks. As expected higher dissolved oxygen levels were observed at cooler water temperatures. Total dissolved solids averaged 0.029g/l over 6 years in the East Fork of the Jarbidge.

Dave Creek: Daily mean maximum temperatures during summer months in 1999 ranged from 13^{O}C on Upper Dave Creek on the National Forest, to about 17^{O}C several miles downstream. Bull trout were present in waters ranging in temperature from about 5 to 14^{O}C. Temperatures may control bull trout distributions in Dave Creek. Young fish likely seek thermal refuge upstream of warmer waters downstream of the exposed, wider channel within the degraded portions of this stream channel. BLM water temperature data collected in Dave Creek from 1998 to 2002 were used to determine average 7 day maximum temperature. Average 7 day maximums ranged from 15.7^{O}C in 1998 to a high of 17.9^{O}C in 2000. However, in 2002, during a year with low snow pack, reduced flows, and a dry summer it was 24.8^{O}C. The daily average water temperature during this time ranged l4 to 18^{O}C. Water temperature for the month of August averaged 13.7^{O}C in 2002. Through all years the warmest water 7 day period occurred in August. Periodic samples taken for dissolved oxygen showed levels varied from 11.7 to 8.7 mg/l. Total dissolved solids averaged 0.018 g/l in Dave Creek.

Jack Creek: Zoellick and others (1996) measured mean water temperatures during snorkeling on this stream at just under 14 ^{O}C. The sample was taken near the mouth of the drainage. Just upstream of the Jack Creek Bridge, BLM has been collecting water temperature data since 1999. The average 7 day maximum temperatures for this period were as follows: 1999 – 15.3 ^{O}C, 2000 – 16.7 ^{O}C, 2001 – 16.5 ^{O}C, and 2002 – 17.1^{O}C. Water temperature data were not collected in Jack Creek in 2002. August is the warmest month. Average monthly water temperatures ranged from 12.3 to 13.9 ^{O}C in August. Dissolved oxygen ranged from 9.4 to 11.3 mg/l. Total dissolved solids averaged 0.016 g/l in Jack Creek.

Buck Creek: Water temperature data has been collected in Buck Creek since 1997. During this time the average 7 day maximum temperatures have varied from 17.1^{O}C in 1997 to a high of 20.7^{O}C in 2000. In 2002 the average 7 day maximum was 18.9^{O}C. The maximum temperatures occurred in August in all years. Dissolved oxygen ranged from 7.9 to 10.9 mg/l when tested over the last 7 years. Total dissolved solids (0.156 g/l) are elevated

in Buck Creek compared to Dave Creek and Jack Creek. This maybe related to the active corral located on Buck Creek upstream of the monitoring point.

Jim Bob Creek: Water temperatures have been monitored in Jim Bob Creek since 1999 below the diversion on Jim Bob Creek. The average 7 day maximum temperatures were 10.3^{O}C (2001), 9.6^{O}C (2000) and 11.5^{O}C (1999). A battery failure in the apparatus in 2002 resulted in no data being collected. In 1999 BLM monitored water temperatures both above and below the diversion structure in Jim Bob Creek. The average water temperature above the dam was warmer by 0.17^{O}C in July and 0.63^{O}C in August than below the dam. By September, the water below the dam was about 0.5^{O}C warmer than upstream. These differences probably reflect the influence of colder ground water in July and August and the colder air temperature in September. Dissolved oxygen varied from 8.3 to 8.7 mg/l in Jim Bob Creek during one point in time sampling between 1999 and 2001. Total dissolved solids averaged 0.024 g/l in Jim Bob Creek during this time.

Because livestock trail across the East Fork of the Jarbidge River to reach Wilkins Island Allotment and Dave Island Pasture of the Poison Butte Allotment, BLM in cooperation with the permittees took water samples to determine the impact of livestock movements on water quality in 1998. Water samples were collected at 3 locations (the control was about 0.1 miles upstream of the crossing location, at the crossing location and about 100 yards downstream of the crossing location. All water samples were kept refrigerated (on ice in a cooler) and taken to Magic Valley Labs for analysis of fecal coliform, and total suspended solids. Fecal coliform and total suspended solids spiked from background levels during the crossing (Table 2-5). The data suggest that impacts of the crossing move rapidly downstream. Water quality returned to near background levels within 24 hours. Livestock trailing had no detectable affects on water temperature, pH, or dissolved oxygen.

Table 2-5. Water quality data collected prior to during and following livestock trailing across the East Fork of the Jarbidge River, 0.1 miles upstream of Murphy Hot Springs, Idaho.

	Control (Upstream)					Crossing Area					Down Stream				
Time (hours)	-1	0	1	24	72*	-1	0	1	24	72*	-1	0	1	24	72*
Water Temp (^{O}C)	15	16	18	16	15	15	17	18	17	16	16	17	18	17	16
pH	8.1	8.4	8.4	8.2	8.5	8.2	8.3	8.4	8.3	8.6	8.2	8.1	8.4	8.2	8.6
Dissolved Oxy (mg/L)	7.5	6.7	6.2	6.6	6.9	7.4	6.3	6.0	6.1	6.7	7.5	6.1	5.9	6.6	6.6
Fecal Coliform cfu/100 ml)	13	20	10	30	10	28	1600	125	55	10	12	4440	400	26	10
Total Suspend Solids (mg/L)	<1	4	<1	<1	18	4	53	11	<1	17	7	157	<1	3	17

-1 hour = 1 hour prior to livestock crossing, 0 = time of livestock crossing, 1, 24, 72 = hours after livestock crossing
* The area received about 0.3 inches of rain during the evening prior to the 72 hour water sample collection elevating the total suspended solids at all sites.

Jim Bob Creek

The maximum amount of water that could potentially flow through the 6" PVC pipe is 0.8 to 1.0 cubic feet per second (cfs) for the Jim Bob Pipeline. The actual flow is less and varies with the time of year depending upon the flow of Jim Bob Creek. On September 24, 2002 a two

gallon bucket was used to measure water flow into the collecting vault for the Jim Bob Pipeline. Flow was determined to be approximately 70-80 gallons per minute (gpm) or 0.16 to 0.18 cfs. The dam on Jim Bob Creek dries up the creek immediately below the structure during the summer, however, water begins flowing into the creek within 50 feet below the diversion point and flows increase further down stream.

On September 24, 2002 stream width, depth and velocity data were collected above the water diversion, near the confluence of Jim Bob Creek and Robinson Creek and on Robinson Creek just upstream of the Jim Bob confluence to determine water flows. Channel width (wetted edge) was measured to the nearest 0.05 meters and water depths to the nearest cm were recorded at 0.10 m intervals. Water velocity was determined by dropping a twig in the water and recording the time (# of seconds) to cover a set distance (4 ft). Autumn was selected to because stream flows are low and it coincides with bull trout spawning. Tables 2-6 through – 2-8, contain the channel measurements taken for the respective stream segments. These data were run through a computer model to determine stream flow (USDA Forest Service1998.)

Above the diversion Jim Bob Creek flowed approximately 0.3 cfs (135 gpm). Flows in Jim Bob Creek were measured to be approximately 1.19 cfs near its confluence with Robinson Creek. Water flows in Robinson Creek were measured to be 1.85 cfs just upstream of the Jim Bob Creek confluence. The water diversion removes just over 15.1% of the flow at the confluence from Jim Bob Creek. Potential flow impacts on Robinson Creek were calculated to be about 5.6% of the total volume. BLM temperature data indicate that Jim Bob Creek is a cold stream with average temperatures less than $12^{O}C$ in most years. Water was about $1^{O}C$ cooler below the diversion structure than above the structure. The colder temperatures are likely related to a spring that empties into Jim Bob Creek near the diversion point. Extensive livestock use of riparian vegetation was noted all along Jim Bob Creek to a fence located just above the confluence with Robinson Creek.

Table 2-6. Channel measurements on Jim Bob Creek upstream of the diversion structure.

Velocity =0.75 ft/sec	Channel Width (wetted edge) in meters (Sept-24-2002)									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Depth (cm)	1	3	5	2	5	6	8	5	3	0

Table 2-7. Channel measurements on Jim Bob Creek upstream of the Robinson Creek confluence.

Velocity = 1 ft/sec.	Channel Width (wetted edge) in meters (Sept-24-2002)													
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Depth (cm)	1	2	5	7	11	14	16	8	12	12	11	10	3	0

Table 2-8. Channel measurements on Robinson Creek upstream of the Jim Bob Creek confluence.

Velocity = 2 ft/sec.	Channel Width (wetted edge) in meters (Sept-24-2002)													
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.35
Depth (cm)	0	1	1	8	4	12	12	11	13	5	9	8	2	1

We examined the effect of these flow changes on potential temperature changes in Robinson Creek to assess possible effects to bull trout, which are particularly sensitive to water temperature. This accomplished using a standard stream flow-temperature model – SSTEMP - developed by John Bartholow of the US Geological Survey. SSTEMP simulates downstream

water temperatures from stream geometry, hydrology, and meteorology. It assumes that input temperatures are mean daily values. The model outputs suggest that reduced stream flows in Jim Bob Creek would affect the mean temperature in Robinson Creek by less than $1^{O}C$, as summarized below.

Output from the SSTEMP model analysis.

Conclusions:

Pipeline diverts .4 cfs.

Flow reduction in Robinson Creek = 1.19+1.85 = 3.040 CFS

Pipeline = .4/3.04 = 13.45%

Effect to temperature:

USING SS Temp version 1.2.2(USGS stream temperature model)

WITHOUT DIVERSION: assumes:	Segment Inflow	1.9 cfs	**WITH DIVERSION: assumes:**	Segment Inflow	1.9 cfs
	Inflow Temp	60 f		Inflow Temp	60 f
	Segment Outflow	3.5 cfs		Segment Outflow	3.1 cfs
	Segment length	1 mile		Segment length	1 mile
	Elevation change	850 ft		Elevation change	850 ft
	Mannings n	0.025		Mannings n	0.025
	Date	16-Aug		Date	16-Aug
	Day length (calculated)	14.19 hours		Day length (calculated)	14.19 hours
	Slope	0.47		Slope	0.47
	Width	4.2 feet		Width	4.2 feet
	Max depth	.4 feet		Max depth	.35 feet
	Shade from Veg	62%		Shade from Veg	62%
	Topographic shade	10%		Topographic shade	10%

Predicted Mean Temperature (F) =	62.47	**Predicted Mean Temperature (F) =**	63.2
Estimated Maximum Temperature (F)=	68.66	**Estimated Maximum Temperature (F)=**	69.48
Approximate Minimum (F)=	56.28	**Approximate Minimum (F)=**	56.92

G. Uplands Monitoring

Upland Grazing. In the past 4 years upland utilization data has been collected in those pastures that are adjacent to the East Fork of the Jarbidge and may influence bull trout habitat. Table 2-9 summarizes the utilization data for those specific pastures. Average use is given for selected pastures in the Poison Butte Allotment since 1998 (Table 2-10). Portions of these pastures lie in the watershed that drains directly into the Jarbidge River. Portions of some of the pastures are in the Poison Creek watershed. No use data have been collected in the Inside Desert Allotment or pastures of the Poison Butte Allotment that were in the Poison Creek watershed but not the watershed that directly empties into the Jarbidge River.

Table 2-9. Utilization and number of AUMs based upon actual use reports for pastures adjacent to the East Fork of the Jarbidge River.

Pasture Name	1998		1999		2001		2002	
	Util %	AUMs	Util %	AUMs	Util %	AUMs	Util %	AUMs
South Sheep	27	53	22	141	0*	0	0*	0
West Airport	16	417	18	414	32	104	s	300 s
West Nevada Strip	17	138	0	0	25	318	10	300
Dave's Island	#	#	#	#	39	1692	0	?

* = pasture rested because a wildfire burned a large portion of the pasture. s = scheduled for grazing later in season; # = no data on utilization or AUM's; ? = Even though this pasture was to be rested, 11 head of cattle were observed in this pasture in September 2002. The cattle apparently came from an adjacent allotment (Wilkins Island).

Table 2-10. Grazing utilization of selected pastures and AUMs within Poison Butte Allotment.

Pasture Name	1998		1999		2001		2002	
	Util %	AUMs	Util %	AUMs	Util %	AUMs	Util %	AUMs
Rock Corral	0	0	0	0	19	407	16	115
Middle Butte	0	0	0	0	26	228	28	900
Poison Butte	17	909	15	584	0	0	42	1300
West Dishpan	0	0	15	334	0	0	0	0
South Sheep	27	53	22	141	0	0	0	0
West Airport	16	417	18	414	32	104	s	300 s
West Halogeton	28	401	0	0	29	395	55	900
West Nevada Strip	17	138	0	0	25	318	10	300

s = scheduled for grazing later in season

Based upon trend monitoring is the trend is generally static within the watershed area (Table 2-11).

Grazing use on key species varies by pasture. Overall use levels were less than 41.7% on crested wheatgrass seedings and less than 31.2% in native plant communities. Utilization on key grass species in the uplands indicated that grasses within pastures were not used at the same levels (Table 2-12). During the summer Idaho fescue was grazed more than bluebunch wheatgrass when they were present together. Cruz and Ganskopp (1998) also reported shifts in livestock use of grasses seasonally.

In the fall of 2001 LSRD staff evaluated portions of Morgan Draw and Wilkins Island (Seronko and Napkora 2001). Livestock trailing in both areas was found to have resulted in

reduced ground cover. The evaluation indicated that portions of the watershed were somewhat unstable and vulnerable to accelerated damage from normal to above normal precipitation events. Morgan Draw had mechanical damage to soils and stream banks on major portions of the drainage. They concluded the vegetative community had been severely altered along the riparian zone and extending into the uplands. On the un-named draw to Wilkins Island used as a trailing route, Seronko and Napkora (2001) reported that a head cut was associated with a road, but livestock trampling were contributing to the problem. The Morgan Draw area on Dave Island Pasture was rested in 2002. A check of stream conditions below the confluence of these draws did not indicate excessive sediment reaching either Dave Creek or the East Fork of the Jarbidge in 2001 Burton et al. 2001). Dense shrub patches apparently trap any sediment transported by below normal precipitation events.

Table 2-11. Summary of range trend studies in the Jarbidge River watershed portions of the Poison Butte, Inside Desert, Taylor Pocket, Wilkins Island, Diamond A, Black Rock Pocket and Seventy One Desert Allotments.

Allotment Name	Location	Trend	Range Condition	Community
Poison Butte	T47N, R59E, Section 16	Static/Down	Good	Native
	T16S, R10E, Section 21	Static		Seeding
	T16S, R10E, Section 18	Down		Seeding
	T16S, R10E, Section 29	Static/Down		Seeding
	T16S, R09E, Section 12A	1 Reading		Seeding
	T16S, R09E, Section 12	Static		Seeding
	T16S, R09E, Section 24	1 Reading		Seeding
	T16S, R09E, Section 02	Static	Fair	Native
	T15S, R09E, Section 20	Static	Fair	Native
	T15S, R09E, Section 09	Static/Up	Fair	Native
	T15S, R09E, Section 21	Static	Poor	Native
	T15S, R09E, Section 23	Static/Up	Poor	Native
	T15S, R08E, Section 12	Static/Up		Seeding
	T14S, R09E, Section 23	Static		Seeding
	T14S, R09E, Section 33	Static		Seeding
	T14S, R08E, Section 10	Static/Up	Poor	Native
Inside Desert	T15S, R09E, Section 02	Static/Down	Fair	Native
	T15S, R10E, Section 31	Static		Seeding
	T15S, R10E, Section 17	Static/Down		Seeding
	T14S, R09E, Section 34	Up		Seeding
	T14S, R10E, Section 05	Down	Poor	Native
	T14S, R10E, Section 08A	Static	Poor	Native
	T14S, R10E, Section 08	Static	Poor	Native
Taylor Pocket	T47N, R57E, Section 08	Down	Poor	Native
	T47N, R57E, Section 18	Down	Fair	Native
	T16S, R07E, Section 23	Static	Poor	Native
Wilkins Island	T16S, R09E, Section 26	Static/Down	Poor	Native
	T16S, R09E, Section 27	Static/Up	Poor	Native

	T47N, R58E, Section 12	Static	Fair	Native
Diamond A	T13S, R07E, Section 16	Static	Fair	Native/Burn
	T14S, R07E, Section 10	Static	Poor	Native
	T14S, R08E, Section 36	Static/Down	Fair	Native
	T15S, R07E, Section 10	Static/Down	Poor	Native
	T15S, R08E, Section 31	Static/Up	Poor	Native
	T16S, R08E, Section 05	Static/Up		Seeding
	T16S, R08E, Section 09	Static	Poor	Native
	T16S, R08E, Section 11	Static	Poor	Native
	T16S, R08E, Section 33	Up	Fair	Native
	T16S, R08E, Section 19	1 Reading	Fair	Native
	T16S, R08E, Section 29	1 Reading	Fair	Native
	T47N, R58E, Section 05	1 Reading	Fair	Native
Black Rock Pocket	No Trend Monitoring			
Seventy One Desert	No Trend Monitoring in Jarbidge River Watershed			
1 Reading: The trend plot was only read once since it was established; Trend Categories: Up – trend improving, Static – no change, Down – trend declining;				

Table 2-12.Utilization by pasture and key species in the Poison Butte Allotment within the Jarbidge River Watershed.

Date	Pasture Name	Township & Range	Key Species	Ave. Height Ungrazed (in.)	Ave. Height Grazed (in.)	Per cent Utilization	Notes
	Daves Island	*RESTED 2002*					
7/8/02	East Poison Butte	T14S,R8E,Sec4	Agsp	14.15	5.72	21.35	5/10 mi west of north trough
	"		Agcr	14.87	4.86	46.93	
	"	T14S,R8E,Sec9	Agcr	18.75	3.07	55.10	4/10 mi from southern trough
7/24/02	East Airport	T15S,R9E,Sec1	Agsp	23.72	6.63	37.59	4/10 mi east of northern trough
	"		Agsm	18.73	8.56	28.22	
	"	T15S,R9E,Sec18	Agsp	22.86	6.54	36.30	4/10 mi north of middle trough
	"		Agsm	18.73	4.68	48.60	
	"	T15S,R9E,Sec18	Agsp	24.58	4.15	59.40	4/10 mi west of south eastern trough
	East Dishpan	*RESTED 2002*					
11/4/02	East Halogeton	T16S,R9E,Sec20	Agcr	14.66	11.90	9.32	7/10 mi north of south trough, west of road
	"		Agsp	19.10	14.78	14.90	
	"	T16N,R10E,Sec20	Agcr	13.13	12.73	4.30	4/10 mi north of south trough, east of road
11/6/02	East Nevada Strip	T47N,R10E,Sec15	Feid	15.70	7.18	37.63	4/10 mi south of north east trough
	"		Agsp	21.17	19.97	5.90	
	"	T47N,R10E,Sec15	Feid	15.13	7.45	35.20	4/10 mi east of south eastern trough
	"		Agsp	17.55	16.27	5.45	
7/25/02	Inside Lake	T13S,R8E,Sec34	Agcr	19.60	8.33	30.23	4/10 mi west of southern trough
7/8/02	Middle Butte	T14S,R8E,Sec28	Agsm	13.60	7.24	30.89	4/10 mi south of trough
	"		Agsp	17.20	8.08	25.92	
	"	T14S,R8E,Sec28	Agsp	17.50	9.83	14.90	4/10 mi north west of trough
	"		Agsm	15.70	6.86	38.45	
7/26/02	North Herb Camp	T12S,R8E,Sec27	Agcr	17.09			4/10 mi west of southern trough
	"	T12S,R8E,Sec27	Agcr	16.90			
7/10/02	N. Poison Creek Burn	T13S,R8E,Sec2	Agcr	14.92	3.32	52.90	4/10 mi south of northern trough
	"	T13S,R8E,Sec12	Agcr	14.40	2.77	56.40	5/10 mi north of southern trough

	North Sheep	*RESTED 2002*					
7/8/02	Poison Butte	T14S,R8E,Sec32	Agsp	16.11	3.97	43.19	4/10 mi north of northern trough
	"		Agcr	16.50	3.00	57.88	
	"	T14S,R9E,Sec8	Agsp	18.23	6.61	24.77	5/10 mi northwest of southern trough
7/8/02	Rock Corral	T13S,R8E,Sec11	Agcr	15.70	7.39	27.14	5/10 mi from both troughs
	"		Agsp	23.57	17.93	4.14	
7/26/02	Salt Bush	T12S,R8E,Sec15	Agcr	19.00	6.38	39.10	4/10 mi from 2nd northern most trough
7/25/02		T13S,R8E,Sec26	Agcr	22.90	7.37	38.80	4/10 mi east of the 2nd southern most trough
11/4/02		T13S,R8E,Sec10	Agcr	11.00			4/10 mi east of northern most trough
		T13S,R8E,Sec15	Pose	7.83			3/10 mi north of 2nd north-western trough
7/26/02	South Herb Camp	T12S,R8E,Sec3	Agcr	20.40			4/10 mi northeast of southern trough
		T12S,R8E,Sec34	Agcr	20.40			4/10 mi from northwest trough & middle trough
7/11/02	S. Poison Burn	T13S,R8E,Sec20	Agcr	19.90	4.71	56.10	5/10 mi from north trough
		T14S,R8E,Sec19	Agcr	17.79	4.18	51.73	5/10 mi from southern fence
	South Sheep	*RESTED 2002*					
7/10/02	West Airport	T15SR9E,Sec18	Agsp	17.93			4/10 mi north of first trough (by fenced pond)
			Agsm	17.67			
		T15S,R9E,Sec7	Agsp	19.50			4/10 mi north of 2nd trough
			Agsm	18.30			
		T15S,R9E,Sec	Agsp	17.67			4/10 mi south east of 3rd trough
			Agsm	17.7			
7/10/02	West Dishpan	*RESTED 2002*	Agsp	16.70			
			Agsm	15.17			
7/25/02	West Halogeton	T16S,R9E,Sec20	Agcr	19.73	5.79	44.48	5/10 mi southwest of southern trough
			Agsp	24.00	3.47	65.13	
8/28/02	West Nevada Strip	T47N,R9E,Sec16	Feid	17.14	7.07	18.60	5/10 mi north of western trough
			Agsp	23.56	19.39	6.40	
		T47N,R9E,Sec15	Feid	18.50	17.11	2.08	5/10 mi northeast of southeastern trough
			Agsp	21.76	21.76	1.10	

DESCRIPTION OF ONGOING ACTIONS

Special Use Permit - Recreation

Permitted recreation is that recreation where BLM authorized the activity through a special use permit. Four white-water recreation outfitters, one survivalist outfitter, and one hunting outfitter may operate at times within the Jarbidge River watershed.

Lands Actions

At this time none of the utility rights of way are up for renewal or review. No problems to bull trout habitat are present with the utility rights-of-ways. The Murphy Hot Springs landing strip continues to be authorized. Roads in the watershed area are not up for review. The road along the Jarbidge River was granted RS-2477 status between Murphy Hot Springs and the Nevada/Idaho state line. BLM has no jurisdiction of this road or its maintenance. Owyhee County (Three Creek Road District) has maintenance responsibilities. Jarbidge Field Office could not confirm RS-2477 status for the road along the Jarbidge River from the Idaho/Nevada border to the Forest Boundary or several other roads in Nevada (Deer Creek Grade, Buck Creek (Rowland) Road).

Fire Suppression

Suppress wildfires that occur within the Jarbidge River Watershed. Initial attack would be made using primarily four wheel drive engines, bull dozers, water bucket drops, and retardant drops. Retardant would not be dropped within and of the canyons nor in perennial streams. Bull dozers would not construct fire line across perennial streams. Hand crews would be used to suppress fires in areas where vehicle access is limited due to topography – steep canyons. Fire lines will have the berm knocked down. Water bars would be constructed on steeper slopes and the fire line would be seeded a mixture of grasses. BLM will contact the Fish & Wildlife Service in the event that a fire threatens to burn riparian habitat in any RHCA (Dave, Columbet, Buck, Jack, Dorsey, Cougar and Deer Creeks as well as the East Fork of the Jarbidge and Jarbidge Rivers) for emergency consultation. A Resource Advisory that is knowledgeable of the consultation will be assigned to the fire.

Noxious Weed Control

Use manual, biotic, and/or herbicides to treat noxious weeds that are found in the Jarbidge River Watershed. The majority of the noxious weeds to be treated would occur in uplands, but some (Canada thistle) are present in the riparian zones. When herbicides are used, the label directions would be strictly followed. The following herbicides maybe used to control noxious weeds: Atrazine, Bromacil, Bromacil + Diuron, Chlorsulfuron, Clopyralid, Clopyralid + 2,4D, 2,4-D, Dicamba, Dicamba + 2,4-D, Diuron, Diuron + Imazapyr, Diuron + Tebuthiuron, Glyphosate, Glyphosate + 2,4-D, Glyphosate + Dicamba, Hexazinone, Imazapyr, Mefluidide, Metsulfuron Methyl, Picloram, Picloram + 2,4-D, Simazine, Sulfometuron Methyl, Tebuthiuron, Triclopyr, Triclopyr + 2,4-D, and Triclopyr + Clopyralid are shown to be within the acceptable range of environmental hazards and risks. The risks were analyzed in the Lower Snake River District Weed Environmental Analysis.

Weed control conducted by BLM will be done by a specialist certified in weed control. All applicators are responsible for complying with applicable Federal, State, and

county laws, codes, and regulations connected with the use of herbicides and biological agents. They must be aware of safety requirements, including personal protective equipment, spray equipment, chemical labels and rates, and environmental concerns. All applicators are also responsible in the event of a hazardous material release on public lands. The use of herbicides adjacent to water will require a minimum 25 foot buffer for vehicle application, a minimum 100 foot buffer for aerial application, and a minimum 10 foot buffer for hand application. An exception to this stipulation would be for those chemicals currently approved for use in aquatic environments. No aerial application of herbicides to control noxious weeds or exotic invasive plants is expected. Known noxious weed infestations within the Jarbidge River watershed are small in size.

Livestock Grazing

Taylor PocketAllotment (1077)
Continue to authorize 1,180 AUMs of livestock grazing (12 horses and 300 cattle) from April 1 through December 15 to 2 permittees in the Taylor Pocket Allotment. The majority of the grazing takes place from April to June, then September into December, however, a few horses are present for the entire grazing period.

Black Rock Pocket Allotment (1102)
Continue to authorize 2,025 AUMs of cattle grazing (approximately 600 - 800 head) year round in the Black Rock Pocket Allotment. The primary use period is from mid September to mid December annually.

Crawfish Allotment (1118)
Continue to authorize 1,065 AUMs of grazing for 300 cattle from April 1 to May 31 and 25 cattle from October 1 to November 30 in the Crawfish Allotment.

Seventy One Desert (1099)
Continue to authorize 2,981 AUMs of cattle grazing (600-800 cattle) year round in the Seventy One Desert Allotment. The normal use period based upon the last several grazing seasons is from December into April, annually

Diamond "A" Allotment (1021)
Continue to authorize 8,546 AUMs of livestock grazing (800 cattle, and 70 horses) from March 1 to Feb 28 to 3 permittees in the Diamond "A" Allotment. Cattle are usually grazing forest service lands from July 1 into September. The majority of the horse use is taken from late November to May. BLM will also renew this grazing permit for a 10 year period in 2003 to the permittees and add resource guidelines.

Wilkins Island Allotment (1084)
Continue to authorize 773 AUMs of grazing 300 cattle from May 1 to October 31 in the Wilkins Allotment. Cattle are typically on Forest Service land from July into September.

Poison Creek AMP Allotment (1050)

Continue to authorize a base of16,448 AUMs for livestock grazing from March 1 to Feb 28 in the Poison Creek AMP Allotment. The allotment has been managed as two separate use areas for the past 10 years. BLM will formally separate the allotment as follows.

Poison Butte Allotment (1050): 6,360 AUMs on the base grazing permit, and issuance of up to 8,633 AUMs of additional grazing.

Inside Desert Allotment (1051): 10,088 AUMs on the base grazing permit and issuance of up to 13,771 AUMs of additional grazing.

The following resource guidelines would be placed on grazing permits for the Diamond "A", Inside Desert, Wilkins Island, and Poison Butte Allotments. The guidelines are designed to provide for recovery of aquatic habitat and maintain upland habitat. Ideally, livestock would be moved prior to any of the guidelines being met. However, meeting any **one** of the guidelines is the trigger to move all livestock from the pasture within 5 days for the grazing year. For the riparian guidelines if any of the following conditions are observed (median stubble height for herbaceous riparian species is <3.5 inches, nipping of current annual growth of shrubs is >60%, or bank alteration exceeds 20% in key areas) or the baseline conditions have been degraded consultation will be reinitiated. Consultation will also be reinitiated when the permits are renewed, or in 10 years which ever comes first. The following are the resource guidelines.

a. Grazing on riparian herbaceous species is limited to leave a median stubble height on key species. Stream segments where the riparian zone was rated as Functional and Functional at risk (FAR) upward trend may be grazed to 4" median stubble height (upland species). Stream segments classified FAR downward trend, FAR no trend, nonfunctional would be managed to a median stubble height of $\geq$ 6" (Clary and Webster 1989). Key species may include but are not limited to: Kentucky bluegrass, small-wing sedge, wooly sedge, Nebraska sedge, and hairgrass). Baltic rush and spike rush are excluded as a key riparian species. An interdisciplinary team will select key species.;

b. Nipping on current year's leaders on available twigs of key riparian browse species within reach not to exceed 50% (Winward 2000). Limiting the nipping of current year's leaders on available woody species should protect growth form, reproduction and age class structure. Key browse species may include but are not limited to: aspen, willows, rose, or currant. Key riparian woody species will be determined by an interdisciplinary team;

c. Bank alteration not to exceed 10% (Cowley 2002) on known fish bearing streams. Manage livestock on known or suspected non-fish bearing streams so that no more than 20% of the stream bank is altered. These guidelines are subject to change after validation of fish presence or absence. [Key areas for all riparian monitoring will be in areas readily accessible to livestock.]

d. No more than 40% use in the uplands in general on key forage species (Holechek 1988, Holechek et al. 1998, Holechek et al. 1999, Vallentine 2000). Key forage species may include but are not limited to: Idaho fescue, bluebunch

wheatgrass, Sandberg bluegrass, or bottlebrush squirreltail. Selection of key species will be done by an interdisciplinary team.;
e. No more than 50% nipping in the uplands on key woody species. Key woody species may include: aspen, rose, chokecherry, currant, snowberry and/or sagebrush in important wildlife habitats. The specific species included for monitoring will be determined by an Interdisciplinary team. Key areas for all upland monitoring will be in areas readily accessible to livestock (Holechek et al 1998, Vallentine 2000).
f. In seedings, grazing use is limited to 50% on key seeded species in key areas. Key herbaceous seeded species includes crested wheatgrass and/or intermediate wheatgrass.

Jim Bob Pipeline

Continue to use water from Jim Bob Creek to water livestock via the Jim Bob Pipeline.

AFFECTS ANALYSIS OF THE ACTIONS

Permitted Recreation

White-water Recreation Outfitters:

The Jarbidge Resource Area authorizes 4 outfitters to guide clients down the Jarbidge River for white-water recreation. Each outfitter is authorized to make three trips. Trips are made during spring run-off (April to mid June) when the river is floatable. During the floating season vegetation along the banks and adjoining terraces be somewhat trampled by human at the camping areas. Due to high water flows and turbidity, fishing opportunities are limited at this time of year. The stipulations on these permits minimize impacts to the WSA and habitat in the Jarbidge River.

Hunting Outfitters:

A single outfitter is authorized to guide mountain lion hunts in game unit 47. Mountain lion season runs from August 30 to March 31 in Unit 47, but the season may terminate after the set quota of female mountain lions have been harvested. Only a small part of unit 47 lies in the Jarbidge River watershed. The outfitter is not authorized to take motorized vehicles into any of the wilderness study area or the Bruneau – Jarbidge River ACEC except on designated routes.

Other Outfitters:

The outfitter permitted to conduct survival training is not authorized to spend any time in that portion Nevada administrated by the Jarbidge Resource Area where bull trout focal habitat is located. Therefore, use in potential resident bull trout habitat will be minimized. Any trips that occur in the late fall through early summer may result in temporary displacement of fluvial bull trout from pools (if present) when the participants cross the Jarbidge River. Crossing the area with few individuals involved is not expected to damage stream banks. In the past one wild fire was ignited by this permit holder while igniting a camp stove. The permit holder is required to rigidly follow the stipulations for travel within the Jarbidge River canyon.

Rights of Way

Utilities:

At this time none of the utility rights-of-way are perceived as having a major impact to bull trout habitat. Roads for the utilities all terminate well beyond the riparian zone on the BLM administered lands. Maintenance of the buried telephone line may require some limited excavation. However, this would occur in the uplands on BLM administered lands. Highly disturbed areas are to be seeded. The jeep trail associated with the power line ends in the upland plateau over 0.2 miles from the riparian zone. The jeep trail is not graded or otherwise maintained. Maintenance to replace poles would occur in the uplands and not impact riparian or aquatic habitat. No substations are located within the watershed boundary on BLM administered lands. All utility rights-of-way only pass over nodal habitat on BLM lands.

Roads:

The main gravel road between Murphy Hot Springs, Idaho and Jarbidge, Nevada is a source of sediment into both forks of the Jarbidge River. BLM does not maintain nor have jurisdiction over the maintenance of this road (RS-2477). Some sediment and rock

are deposited over the berm along the road during periodic maintenance (road grading). The location of the road in the riparian zone for much of its length forces flows to the opposite shore. The past removal of willows and trees from the road side reduces the amount of shade over the water. The removal of large woody debris in the stream channels to prevent water being forced against the roadside bank decreases the habitat complexity, cover, and detritus in bull trout habitat. The main gravel road to Wilkins Island has been water barred to reduce rilling of the road bed. One of the water bars is near a head cut in an un-named draw. Run-off from the road appears to be assisting in keeping the head cut from stabilizing. BLM is presently working with Three Creek Road District to resolve this concern. Stipulations on the FLPMA roads do not really address road maintenance other than all work is to be done within the right-of- way.

Fire Suppression

Wild fires in the Jarbidge River watershed occur annually. For the most part fires remain on the upland plateaus. The riparian zones are located in the bottom of canyons that are relatively unlikely to attract lightning. The only fire in the past 10 years that burned within the Jarbidge River floodplain was man caused. Because of steep topography fire suppression in the canyons is typically limited to water drops and hand lines. On the adjacent plateaus bull dozers, fire trucks, as well as aerial water and retardant drops are commonly used to suppress fires.

Affects

Water removal:

Water tenders or individual fire engines may pump water from the Jarbidge River or tributaries to fill tanks to transport to the fire. Most water tenders can haul up to 10,000 gallons of water. Removal of this amount of water is not believed to affect over all stream flows. In some instances on smaller stream (Columbet Creek), it may be necessary to place a temporary canvas dam to create a pool so water can be pumped. If any bull trout are present these activities may result in temporary displacement of individual fish. Suction hoses for fill pumps are usually fitted with a screened foot valve to filter our debris. However, the size of the mesh may allow small fry to be removed along with the water. Because of limited vehicle access it is unlikely that bull trout rearing creeks would be used to fill water tenders. Some water tenders are able to draft directly out of the water source with suction hose. Others use portable fill pumps are gasoline powered. It is possible that gasoline may be spilled in riparian zone the while filling these portable pumps.

On some fires hose lays are used to pump water from a water source to suppress or mop up hot spots along the fire line. A pump would divert water from creek to the fire. Depending upon the creek size and depth, small temporary dam may be used to pond water so that a hose lay could be operated. If any bull trout were present in the area, they may be displaced from the immediate area. These portable pumps are gas powered. A gasoline spill may occur in the riparian zone when pumps are filled.

Helicopters can dip water from the Jarbidge River in a few locations. If bull trout were present they may vacate individual pools used for dipping. It is possible that individual fluvial bull trout could be trapped in the dipping operation. If this occurred, the bull trout would be killed when water is released on the fire. Except for late season

fires (after mid September), fluvial bull trout would usually not be present in the Jarbidge River because of warm water temperatures.

Fire line construction:

Because of the topography in the Jarbidge River and tributaries known to have bull trout (Jack Creek, Deer Creek, and Dave Creek) using a bull dozer to construct fire line is unlikely. The headwater streams are also less prone to wildfire. Bull dozers have been used on some fires to cut fire line across Cougar Creek, Poison Creek, and other ephemeral drainages. Chainsaw maybe used to cut shrubs and trees. A small gasoline spill could occur while saws are being refueled. Fire lines down steep slopes may increase the amount of sediment into the water for a couple years following the fire due to reduced vegetation. Erosion may also happen when hand lines are dug on steep hills. Lower Snake River District (BLM) policy is that fire lines on steep slopes have water bars constructed in them to reduce erosion. Reseeding fire lines, particularly bull dozed lines, will help speed vegetative cover and reduce soil erosion.

Fire retardant:

Retardant is not supposed to be used within 300 feet of the water. However, some fire retardant may enter the aquatic system either through wind drift, accidental direct application (missed target), or in run-off. Depending upon the specific chemical components of the retardant, it would likely impair water quality in the short term. In some instances chemicals are added to water to create foam to aid in suppression. The release of the chemical or foam into the water may impair water quality short term.

Support/Staging Areas:

Fire camps, refueling areas, helispots and other support areas can be used during fire suppression. These areas tend to high disturbance because of concentrated human activity. Fuel spills, damage to roads, and heavy trampling of vegetation may occur in support areas.

New Jeep Trails:

Depending upon the fire location, travel by fire engines may result in the formation of new jeep trails into a fire. In many instances herbaceous vegetation recovers and new shrubs replace those broken by vehicle tires. However, in some cases the public may subsequently use the trails to enter areas that were previously not accessible. Even light repeated vehicle use can hinder the recovery/establishment of shrubs. For the most part the Jarbidge River lies within the Jarbidge River WSA and Bruneau/Jarbidge River ACEC. The land use plans does not allow for new roads within these special designations. Any new trails created as a result of fire suppression should be clearly posted as closed to public use.

Suppression Guidelines

Jarbidge Field Office will adopt the following suppression guidelines when a fire occurs in or threatens any of the priority watersheds for bull trout. RHCAs are shown on the attached map (Figures 8a and 8b). These guidelines define the measures needed to comply with consultation requirements for bull trout in the Jarbidge Field Office.

1. Suppression techniques - Utilize minimum impact suppression techniques in areas where there is potential to damage bull trout habitat. With worker safety of primary concern, every effort should be made to minimize stream course disturbance, sedimentation, and actions that will result in increased water temperatures

2. Use of bull dozers - Do not use bull dozers, except for the protection of life and property within the RHCAs.
3. Chemical use - Refrain from using chemicals when there is a potential for direct stream contamination. Do not apply retardant near live streams. Do not drop retardant or foam directly in streams or in identified adjacent riparian area.
4. Water Removal - Pump only with filters that prevent entrainment of fry. Do not pump directly from streams if chemical products are going to be injected into the system. If chemicals are needed/used, pump from a fold-a-tank. Helicopter bucket dipping from streams used for spawning/early rearing of bull trout should be avoided. Dipping will be done only after chemical injection systems (storage containers) have been removed from the bucket and/or the helicopter.
5. Fueling/Refueling operations - Keep refueling, fuel storage, and fuel trucks at least 100 feet away from live streams and riparian areas.
6. Avoid increasing fire intensities in riparian areas during burnout or backfire operations.
7. Resource Advisor - A biologist or specialist with understanding of bull trout requirements (BA's and BO's) will be involved in the development of a Fire Situation Analysis (FSA) or an Escaped Fire Situations Analysis (EFSA), working with or as the Resource Advisor. A Biologist/Resource Advisor will be readily available to the Incident Commander. This advisor will review shift plans to assess the potential effects of the planned actions.
8. Support Areas - Camps, staging areas, refueling areas, and base heliport locations will be identified during this process. Identification will be approved either during pre-suppression planning, or on a case by case basis.
9. Rehabilitation - An emergency Rehabilitation Team will be assigned to all fires over 100 acres to determine if rehabilitation is warranted. A biologist will always be assigned to the Rehab Team. In the event that riparian zones are burned, the rehabilitation plan will evaluate whether to include plant species (sedges, willows, trees) that will stabilize banks and provide shade over water.
10. Erosion controls - Fire line will be water barred, seeded, and otherwise treated as it is completed. After the fire is out, a Resource Advisor/Biologist will review the suppression and rehabilitation efforts to see if the tactics identified in the EFSA were successfully implemented. Access roads will be evaluated to determine if they need any rehabilitation. Any **new** trails created within the WSA or ACEC as a result of fire suppression will be clearly posted as closed to public use as part of the rehabilitation plan.
11. Briefings - The Resource Advisor/Biologist will brief fire overhead on threatened species present and the legal requirements. The Resource Advisor/Biologist will initiate contact with the appropriate USF&WS contact (or representative) and complete emergency consultation as directed by the regulatory agency representative.

Additional Fire Suppression Considerations

1. Do not use areas within RHCAs for helispots, fire camp location, refueling or other staging sites.
2. A biologist will always be assigned to the Rehab Team

3. Any rehab of the fire line will be under the guidance of the resource advisor.
4. After the fire is out, the biologist will review the suppression and rehabilitation efforts to see if the tactics identified in the EFSA were successfully implemented
5. During briefings, overhead and law enforcement officers will be made aware of their responsibilities concerning the threatened species and the legal requirements.

Noxious Weed Control

To date noxious weed control within the Jarbidge River Watershed, particularly in riparian areas, has been limited. Chemicals used in Jarbidge River watershed to date include by BLM include: Tordon®, 2-4 D, Roundup®, Oust®). Truck mounted sprayers are used on infestations along roads to help control Scotch thistle and white top. The chemical was used on the upland terrace and not in the riparian zone. Tordon does not kill graminoids. Overspray likely reduced some of the forb species normally found on the terrace. Larger patches of Canada thistle have been documented along Columbet Creek which will be sprayed in the future. The same methods (hand held wand attached to a sprayer mounted in a truck) would be used to spray for noxious weeds along the East Fork of the Jarbidge. Because vehicle access is limited, a backpack sprayer would be used to treat noxious weeds in Dave Creek. In addition to BLM, counties and road districts also spray for noxious weeds.

Affects:

Soils

The disturbance of soils caused by manual methods should be negligible due to the small size of areas proposed for treatment. Off highway vehicle (OHV) travel to access weed sites may cause temporary, short term impacts. Because travel to these weed sites would only occur once per year per site overall impacts should be negligible. Biological control of weeds would have minimal impacts due to the slow action of this process and the limited interaction with the soil. Herbicides can damage or kill non-target plants. With the exception of Roundup®, the other herbicides are more specific to broadleaf species. Removal of solid stands of vegetation, by chemical treatment, may result in short term increases in soil erosion. This would diminish as vegetation becomes re-established on the treated site. It is expected that overall, soil loss from erosion would be insignificant. Herbicides also have differing residual affects. Tordon® persists longer in the soil than Roundup®.

Aquatic

Manual methods would have little or no impact on aquatic resources. Biological control by insects or pathogens would have little or no impact on aquatic resources as vegetative cover would remain intact as targeted plants would remain standing. Herbicides applied to land may enter surface or ground water. However, low application rates in these arid and semi/arid areas are not expected to allow herbicides to reach ground water. Avoidance of waterways and adherence to buffer strips adjacent to waterways should also result in no water contamination there. Any herbicide escape into a stream system, due to heavy storm runoff or herbicide drift, would be very small and diluted by the stream flow. Some herbicides, such as Rodeo® are registered for use in and around water. This type of herbicide may be used to control weeds that grow in and around wetland or riparian areas. By adhering to label restrictions and precautions, impacts to aquatic resources would be minimal.

Vegetation

Manual vegetation treatment would have some weed control success on small areas, but most weeds in larger infested areas would spread as a result of ineffective control efforts. Non-target species would benefit from reduced competition from weeds for water and nutrients. Impacts of biological treatment by insects and pathogens on vegetation would be slight. Target plants will normally remain standing although they may be weakened or unable to reproduce. Broad-leaf plants are most affected by the application of herbicides as proposed. Many of these herbicides are selective for most broadleaf plants and both target species and non-target species may be killed where they are applied. Grasses may suffer slight damage but will recover and should increase due to reduced competition. Glycosate herbicides (Rodeo® and Roundup®) are broad spectrum herbicides that are non-selective and may kill grasses as well as broad-leaf plants.

Noxious weed infestations along Buck Creek, Dave Creek, East Fork of the Jarbidge, Morgan Draw,and Columbet Creek are small. Dave Creek, Morgan Draw, and portions of Columbet Creek are only accessible by foot. Noxious weeds in riparian areas would be treated by pulling, cutting, or herbicide applied with a backpack sprayer with a wand. Individual plants are treated under these conditions. Treatment of noxious weeds in this manner reduces the impact to non-target plants and the chance of over spray into aquatic systems. The following stipulations would be followed for noxious weed control:

1. All applications are done under the direct supervision of a certified weed control expert (our area Fire Use Specialist).
2. Herbicide would not be applied in windy conditions to minimize wind drift.
3. Herbicides would be mixed in strict adherence to label directions and EPA label compliance.
4. No chemicals would be mixed in riparian areas.

Livestock Grazing

Uplands

Livestock grazing influences the condition of the uplands in a number of ways. Livestock consume some of the annual vegetative biomass produced, which reduces the amount of plant biomass that forms litter. Numerous authors have noted that grazing can change plant community species composition (Dyksterhuis 1958, Holechek et al. 1999). Some plants are typically very palatable species that are fairly intolerant of grazing (decreasers), while generally moderately palatable plant species increase with grazing (increasers), and at some level other plant species invade (invaders) (Holechek et al. 1999).

Livestock trampling influences soil cover. The scientific literature is consistent in that increased grazing intensity, causes biological soil crusts to decline and that grazing use hinders the recovery of biological soil crusts (Belnap et al. 2001b). Biological soil crusts are important in reducing soil erosion (Johansen et al. 1993, Belnap and Gillette 1998, Rychert 2002), particularly, on *Artemisia tridentata* spp. *wyomingensis*, and spp. *tridentata*, sagebrush communities (Belnap et al. 2001b, BLM 2002). Sites containing *A.t.* spp. *vaseyanna* and spp. *xericensis* may have more herbaceous cover and less biological soil crusts (BLM 2002). Mapfumo et al. (2002) noted that herbaceous litter reduces soil erosion. Bare soils are more susceptible to raindrop impact and soil

aggregate break down which lead to surface sealing and increased erosion (Mapfumo et al. 2002, Rychert 2002). Mapfumo et al. (2002) wrote that litter is especially critical at snowmelt and during intense rainfall events.

Riparian/Aquatic

Livestock impacts to the riparian zone may include: damage to stream banks which reduces or eliminates overhanging banks (cover) increases sediment or destabilizes banks which may lead to channel widening and reducing pool depth (Bowers et al. 1979, Leonard et al. 1997). Changes in plant species composition to more xeric species weakens the root masses for bank stability and can reduce stream shading (Bowers et al. 1979, Kaufman and Krueger 1984). Reductions in herbaceous stubble height (<4") may lessen the sediment trapped by herbaceous vegetation (Clary and Webster 1989, Leonard et al 1997), reduction in ground cover, and soil compaction (Bowers et al, 1979) and water quality (Bowers et al. 1979, Fleischner 1994).

Specifics for Allotments

Taylor Pocket Allotment (1077)

Livestock in the Taylor Pocket Allotment do not have access to any perennial streams in the Jarbidge River Watershed. The upland plant communities had less plant cover and more bare ground that would be expected based upon an upland assessment. However, these data were collected in an area that drains into Deep Creek (Bruneau River watershed). Grazing livestock (1,180 AUMs) are expected to ingest approximately 500 to 550 tons of biomass from the entire allotment. Portions of the Hole-in-the-Ground and Bear Paw pastures are within the Jarbidge River Watershed. No water sources lie in the portion of the pastures within the Jarbidge River Watershed. Areas more distant from water sites have more ground cover. Therefore, BLM estimates less then 25% of the biomass removed would likely be in the Jarbidge River watershed. Trampling damage (compaction and damage to biological soil crusts) to the soil has been somewhat reduced due to the shift in the season of use to later in the growing season in the spring. Additionally, any sediment that may move off the allotment would be trapped behind the dam for Cowan Reservoir.

Black Rock Pocket Allotment (1102)

Grazing cattle (2,025 AUMs) would consume approximately 860 to 910 tons of biomass from the entire Black Rock Pocket Allotment. Livestock in the Black Rock Pocket do not have access to any perennial streams. The upper portion of Cougar Creek within the allotment is ephemeral. Four water troughs are located within the Jarbidge River Watershed. Upland assessment data for the eastside of the Black Rock Pocket Allotment indicate that bare ground is less than 10 % within the Jarbidge River Watershed. Bare ground is somewhat higher in the western part of the watershed. This was a result of a wildfire in the 1980's that reduced biological soil crusts, which take decades to recover to pre-burn levels. Livestock grazing use in this portion of the Black Rock Pocket Allotment averaged roughly 25%. The majority of the grazed AUMs likely occur within the Jarbidge River Watershed. Because this allotment is grazed in the late fall

trampling damage to biological soil crusts and soils are reduced over that expected for summer grazing. Any sediment that may move in the majority of the Black Rock Pocket Allotment would be trapped by Cowan Reservoir.

Crawfish Allotment (1118)

Grazing cattle in the Crawfish Allotment would eat about 450 to 480 tons of vegetal biomass. BLM lacks recent data to estimate the amount of herbaceous forage produced within this allotment. Grazing livestock do not have access to any perennial streams in the Crawfish Allotment. The portion of the Crawfish Allotment within the Jarbidge River Watershed that may provide sediment would be through ephemeral streams that would empty into Poison Creek. No stock waters are located within the Jarbidge River Watershed in this allotment. BLM estimates that less than 25% of the AUMs come from the Jarbidge River Watershed. BLM lacks any cover data to determine the amount of bare ground in the Crawfish Allotment.

Seventy One Desert Allotment (1099)

Grazing cattle in the Seventy One Desert Allotment would consume roughly 1,260 to 1,340 tons of plant biomass. Only a small portion of the Indian Hot Springs pasture lies within the Jarbidge River Watershed. The only water trough is over 4 miles to the northeast. A playa is present about 0.1 miles west of the Jarbidge River Watershed. However, this natural feature does not provide a reliable source of water. BLM estimates that less than 1% of the AUMs in this allotment are grazed within the Jarbidge River Watershed. Because the allotment is grazed in the winter, damage to biological soil crusts is believed to be less than if grazed in the summer. A gate across the road into Indian Hot Springs restricts livestock access to the Bruneau and lower portion of the Jarbidge Rivers. If the gate is open, livestock have access to bull trout nodal habitat. Because of the topography, livestock would not readily walk back to the uplands from the river bottom.

Diamond A Allotment (1021)

Livestock grazing in the Diamond "A" Allotment would consume 3,630 to 3,900 tons of vegetal biomass. In areas with BLM lands in the Diamond "A", all of pastures II, III, IV, V, VI and VIII and most of Pasture I are within the Jarbidge River Watershed. Resource guidelines will be added to the grazing permit for this allotment for use of herbaceous riparian vegetation, woody riparian vegetation, stream bank modification, and use of upland vegetation.

BLM has noted evidence (cow pats) of cattle being present in Deer Creek (Pasture VIII). However, the site visits to date have not documented livestock damage to stream banks or use on riparian vegetation. Livestock use in this area likely occurs in the fall, after cattle move off Forest Service pastures or they may move downstream from the Forest Service pasture. While in pasture IV, livestock can trail down the Deer Creek Grade road into the bottom of Deer Creek or private land on the Jarbidge River. Livestock grazing along Deer Creek in during

spawning in the fall may result in bull trout movements or trampling of redds (if present). Livestock trampling of redds in Deer Creek, could result in a high impact to the species because of the low bull trout population.

Pasture I has an access route into the Jarbidge River Canyon. A site visit conducted by BLM in 1993 found heavy livestock use in the basin which had resulted in degraded uplands and some stream bank damage. This area has not been checked since then. Livestock can access the Jarbidge River down Columbet Creek in Pasture III. A fence on private land somewhat restricts livestock access, however, there are other access points for livestock into Columbet Creek that bypass the fence on private land. A visit to the confluence of Columbet Creek in the summer of 1997 showed that livestock use in this area was limited. Grazing occurs in both Pasture I and III at a time when fluvial bull trout would likely be present (fall through spring). Although livestock may cause bull trout to move in the Jarbidge River, of greater concern is potential damage to the riparian vegetation that stabilize stream banks

Wilkins Island Allotment (1084)

Cattle grazing the 773 AUMs would remove about 310 to 350 tons of vegetation in the Wilkins Allotment. BLM has no recent data to indicate the amount of herbaceous vegetation produced in this allotment. All of the ingested vegetation is within the Jarbidge River Watershed. The existing fence that separates Wilkins Island Allotment from Dave Creek is an older fence and in need of some repair. Gates are occasionally left open. Livestock from the Wilkins Island Allotment were observed in Dave Island Pasture in September 18, 2002. Cattle crossed Dave Creek during spawning season to reach the location where they were observed. Because livestock remain in this allotment until late fall there is possibility that they may enter Dave Creek during or following bull trout spawning in the fall. If this occurred, cattle may displace bull trout from spawning pools or trample redds. Livestock trampling of redds in Dave Creek, could result in a potentially high impact to the species because of the low bull trout population. If livestock from Wilkin Island Allotment remained along Dave Creek for an extended period of time bank damage may result in increased sediment to Dave Creek or under cut banks could be collapsed. A gate in the fence near Murphy Hot Springs, if opened, would allow livestock in this allotment to travel up the East Fork of the Jarbidge to Dave Creek or further upstream. Livestock are trailed across the East Fork of the Jarbidge River, through this fence when they enter and leave the Wilkins Island Allotment or the Dave Island Pasture of the Poison Butte use area. A gate in the fence of Rattlesnake Creek would allow livestock to reach the Jarbidge River upstream of the Jarbidge Forks confluence. To date there is no evidence that livestock leave the Wilkins Island Allotment via bottom of Rattlesnake Creek.

Poison Creek AMP Allotment (1050)

Poison Butte (1050): Livestock would be allowed to graze up to a total of 14,993 AUMs. Cattle and horses would consume 6,370 - 6,750 tons of vegetation. Data

collected in the mid 1990's indicate that there are roughly 22,100 tons of herbaceous vegetation (forage) produced in the Poison Butte Allotment. All or portions of 18 of the 22 pastures in the Poison Butte Allotment lie within the Jarbidge River Watershed. BLM will send a copy of the grazing plan to the FWS annually. If changes to the plan are made (i.e. pastures closed because of wild fire, etc.), BLM will notify the FWS of changes in a timely manner. Livestock have access to the Jarbidge River Canyon from the Inside Lakes and Rock Corral Pastures. They may also access the Jarbidge River from the Poison Butte Pasture. These pastures are typically grazed in the fall through late spring when fluvial bull trout could be present. If livestock get through the fence in the West Nevada Strip, they can access the East Fork of the Jarbidge River. The use period in this pasture can coincide with the presence of bull trout, particularly in September or later in the year. The consumption of vegetation beyond the base permit will probably result in less litter on the soils surface. Trampling of biological soil crusts may result in an increase in bare ground. Biological soil crusts are more important in pastures where the Wyoming big sagebrush is the dominant shrub and Thurber's needlegrass is the dominant grass. Low sagebrush/Idaho fescue sites usually occur in higher precipitation zones and subsequently more vegetative cover and in some areas with stony soils. BLM dos not believe that the consumption of additional vegetation will result in any noticeable increase in soil erosion.

In the Dave Island Pasture livestock presently have access to much of the length of Dave Creek. Until additional fences can be constructed (see mitigation chapter), the permittee will be required to remove the bulk of the cattle prior to August 31, when the pasture would be checked to round up any strays. Resource guidelines will be added to the grazing permit for this allotment for use of herbaceous riparian vegetation, woody riparian vegetation, stream bank modification, and use of upland vegetation. Livestock use may shift to the private land portion of the Dave Island Pasture to after August 31 following construction of fences on BLM lands. Livestock grazing in this pasture would occur during and after bull trout spawning. Livestock may get through the fence into Dave Creek on BLM land after the August 31 date. Livestock may displace bull trout from spawning habitat, trample redds, damage stream banks, collapse overhanging banks and/or increase sediment. Livestock trampling of redds in Dave Creek, could result in a high impact to the species because of the low bull trout population. BLM has no jurisdiction of the grazing of the private land.

Inside Desert (1051): A total of up to 23,859 AUMs (10,000 – 10,700 tons) of plant material would be consumed grazing livestock in the Inside Desert Allotment. Data collected in the mid 1990's indicate that there is roughly 33,500 tons of herbaceous vegetation produced in the Inside Desert Allotment. All or portions of 9 of 31 pastures in the Inside Desert Allotment are within the Jarbidge River Watershed. Livestock in this allotment do not have access to any fish bearing streams in the Jarbidge River Watershed. Resource guidelines will be added to the grazing permit for this allotment for use of herbaceous riparian vegetation, woody riparian vegetation, stream bank modification, and use of

upland vegetation. Consumption of vegetation beyond the base permit will probably result in less litter on the soils surface. Trampling of biological soil crusts may result in an increase in bare ground. Biological soil crusts are more important in pastures where the Wyoming big sagebrush is the dominant shrub and Thurber's needlegrass is the dominant grass. Low sagebrush/Idaho fescue sites usually occur in higher precipitation zones and subsequently more vegetative cover and in some areas with stony soils. BLM does not believe that amount of vegetation consumed by livestock would result in a noticeable increase erosion.

Jim Bob Pipeline

The volume of water diverted from Jim Bob Creek during run-off (spring/early summer) may be higher that the amount of water removed in the fall. Potentially, 0.8 cfs or slightly more could be diverted by the Jim Bob Pipeline. During the fall at least 0.18 cfs of water would continue to be removed from Jim Bob Creek to supply water for the Jim Bob Pipeline. This represents a reduction in the base flow. The flow of Jim Bob Creek at the diversion point was about 0.3 cfs. The effect of the diversion on Jim Bob Creek is about a 15% reduction in the base flow in Jim Bob Creek in the fall. However, Jim Bob gains water as it moves down stream. The flow in the lower portion of Jim Bob Creek is over 1 cfs. The impact to Robinson Creek below the Jim Bob confluence was calculated to be only a 5% reduction in flow in the fall. BLM does not have data to indicate whether or not Robinson Creek gains water below the Jim Bob confluence. BLM has no information on the effect of the reduced flow on sediment transport or pool depth in Jim Bob or Robinson Creeks.

Although the SSTEMP model predicted that water temperature in Jim Bob Creek would potentially be cooled by about $1^{O}C$, the water being diverted in July and August is 0.2 to $0.6^{O}C$ warmer than the ground water recharging Jim Bob Creek. Because warmer water is being diverted, the over all potential adverse impact to water temperature in Jim Bob Creek is reduced in July and August.

DETERMINATIONS

Permitted Recreation

White-water outfitters: May Affect, Not Likely to Adversely Affect.
Rationale: Outfitters are limited to only 2 trips each. The time of the year when guided white-water recreation occurs (spring run-off), there is little chance that fishing would occur due to the flows. Impacts from camps of guided clients are expected to be minimal due to the stipulations for operating within a Wilderness Study Area. Fluvial bull trout are likely to be present at the time the outfitters operate in the Jarbidge River.

Hunting Outfitter: May Affect, Not Likely to Adversely Affect. The outfitter offers guided mountain lion hunts in Hunt Units 46 and 47. Due to the difficult and limited access, it is unlikely much time is spent in the Jarbidge River canyon. Jarbidge Field Office does not authorize any hunting outfitter to operate in bull trout focal habitat. Mountain lion season in Idaho extends from August to March. Some fluvial bull trout maybe present in the Jarbidge River canyon from September through May. Any trips into the Jarbidge River Canyon would require adherence to stipulations develop to protect the WSA.

Survivalist Outfitter: May Affect, Not Likely to Adversely Affect. This outfitter makes sporadic trips into this bull trout nodal habitat. During the summer, the water is likely too warm (>24^{O}C) to support bull trout. Fishing season in Idaho is closed from late November into March. The majority of the trips to date are made in the late spring to early fall.

Lands

Utilities: May Affect, Not Likely to Adversely Affect.
For the most part the utility rights-of-way have had little impact to the overall watershed. The power line has a jeep trail used by the power company for maintenance. This jeep trail receives some use by the general public, but terminates in the uplands over 300 vertical feet above the floodplain.

Roads: May Affect, Likely to Adversely Affect. BLM does not do any maintenance of roads within the Jarbidge River watershed. Roads that have been granted RS-2477 status, the Jarbidge Road, are no longer in BLM jurisdiction. Roads in the bottom of the Jarbidge River Canyon are a continued source of sediment into the East and West Fork s of the Jarbidge River from the natural slumping of earth to side casting sediment and rocks directly into the stream channel. Vagrant dust and sediment from motorize vehicles using the graveled road enters the aquatic system. The position of the Jarbidge Road has confined the floodplain and resulted in increased erosion of the opposite bank. The Buck Creek Bridge abutments, constricts the stream channel and increases water velocity. Removal of large woody debris from the stream channel reduces habitat complexity. Run-off from the road to Wilkins Island has resulted in a head cut in an unnamed draw. BLM will continue to work with Three Creek Road District to reduce impacts.

Fire Suppression

May Affect, Likely to Adversely Affect.
Rationale: Within the watershed area, an average of 1 fire a year burns. Only 2 fires since 1980 have burned to the riparian zone. Wild fire is not a common occurrence in

riparian zones in the Jarbidge River watershed. Restrictions on bull dozer use for fire line construction, use of fire retardant in riparian zones, helicopter dipping, base camps, staging areas should reduce, but not eliminate potential adverse impacts of fire suppression.

Noxious Weed Control

May Affect, Not Likely to Adversely Affect.

Rationale: A certified weed control specialist would be the primary person doing noxious weed control. Within riparian areas, only those herbicides designated for use around the aquatic environment would be used. Herbicide would not be applied in windy conditions. EPA label instructions would be followed. Due to limited access, any noxious weed treatment would be done using a backpack sprayer with a wand. Herbicides would not be mixed within the riparian zone to minimize the chance of spills. Even with using a wand to apply herbicides some overspray may occur. Over spray with herbicides specific for use within riparian zones should result in minimal, short-term effects to water quality. In focal habitat all weed treatment would be done prior to August 15. BLM is not proposing spraying in areas where bull trout spawning is known to occur. With these limitations, noxious weed control, should result in negligible, discountable, and insignificant impacts to bull trout or its habitat.

Grazing

The adoption of INFISH standards for riparian zones should reduce, grazing impacts to bull trout habitat. Livestock grazing will continue to coincide with bull trout spawning in the Wilkins Island, Diamond "A", Inside Desert, and Poison Butte Allotments.

Crawfish Allotment

May Affect Not Likely to Adversely Affect.

Rationale: The vast majority of the allotment does not lie within the Jarbidge River watershed. Livestock in this allotment do not have access to any bull trout habitat. No perennial streams are present. No livestock water sources in this allotment are within the Jarbidge River watershed boundary. Grazing reduces the some of herbaceous cover that would become litter. Trampling tends to reduce biological soil crusts. BLM believes that any sediment produced would likely remain on site. During wet years some sediment may move down Poison Creek. Any sediment produced is expected to be negligible and discountable.

Taylor Pocket Allotment

May Affect Not Likely to Adversely Affect

Rationale: The majority of the allotment is not within the Jarbidge River watershed. Livestock in this allotment do not have access to bull trout streams within the Jarbidge River watershed. Livestock water sources are located within 0.2 miles of the Jarbidge River watershed. Grazing reduces the some of herbaceous cover that would become litter. Trampling tends to reduce biological soil crusts. Any sediment produced by the grazing of the portion of the allotment that lies within the Jarbidge River watershed would likely be trapped by Cowan Reservoir.

Black Rock Pocket Allotment

May Affect, Not Likely to Adversely Affect

Rationale: The majority of the allotment is within the Jarbidge River watershed, but the majority of the allotment drains into Cowan Reservoir. Livestock in this allotment do not have access to bull trout habitat. Four livestock water sources lie within the Jarbidge River watershed boundary, two of these are up gradient from Cowan Reservoir. Grazing reduces the some of herbaceous cover that would become litter. Trampling tends to reduce biological soil crusts. Based upon cover data, very little bare ground is present in native plant communities. Any sediment that may leave the allotment is believed to be negligible and discountable.

Seventy One Desert Allotment

May Affect, Not Likely to Adversely Affect

Rationale: The vast majority of this allotment (3 of 4 pastures) is not within the Jarbidge River watershed. The only reliable livestock water source in the Indian Hot Springs pasture is over 4 miles from the watershed boundary. Grazing reduces the some of herbaceous cover that would become litter. Trampling tends to reduce biological soil crusts. Livestock have access to the Bruneau and Jarbidge Rivers if the gate is open on the road to Indian Hot Springs. Livestock grazing period (winter and spring) coincides with the time bull trout would be present. Livestock in this allotment do not have access to bull trout spawning or rearing habitat.

Inside Desert Allotment

May Affect, Not Likely to Adversely Affect

The majority of the allotment is not within the Jarbidge River watershed. Livestock do not have access to any bull trout habitat. Grazing reduces the some of herbaceous cover that would become litter. Trampling tends to reduce biological soil crusts. Within the 9 pastures located partially or entirely within the Jarbidge River watershed, 5 livestock water troughs are located within the watershed boundary. In addition a number of ponds are present in the bottom of Poison Creek. Sediment produced by trampling at ponds in the bottom of Poison Creek, would likely be transported to the Jarbidge River. Poison Creek enters the Jarbidge River well downstream of known or suspected spawning or rearing habitat. The amount of additional sediment produced is likely to be negligible and discountable. Sediment would probably be transported during the spring in years with above normal precipitation.

Diamond “A” Allotment

May Affect, Likely to Adversely Affect

The majority of the Diamond “A” Allotment lies within the Jarbidge River watershed. Grazing reduces the some of herbaceous cover that would become litter. Trampling tends to reduce biological soil crusts. The amount of additional sediment produced is likely to be negligible and discountable. Livestock in the Diamond “A” Allotment have access to bull trout focal, nodal and adjunct habitat. Livestock have limited access to Deer Creek during the time that coincides with bull trout spawning and incubation (Pasture IV and VIII). Livestock have access to the Jarbidge River from the fall through spring (Pastures I and III) when fluvial bull trout would be present. Livestock trampling of redds in Deer Creek, could result in a high impact because of the low bull trout population.

Poison Butte Allotment

May Affect, Likely to Adversely Affect

The majority of this allotment and all or portions of 16 of 27 pastures are within the Jarbidge River watershed. Grazing reduces the some of herbaceous cover that would

become litter. Trampling tends to reduce biological soil crusts. The amount of additional sediment produced is likely to be negligible and discountable. Livestock in this allotment have access to bull trout focal and nodal habitat. The allotment is grazed by livestock year round. Livestock have access to spawning and rearing habitat in Dave Creek in the fall during bull trout spawning. Livestock trailing into the Dave Island pasture has resulted in reduced cover and increased soil erosion. Data for Dave Creek shows that the % fines and embeddedness rates are elevated. Although mitigation (additional fencing) is proposed, livestock will still be present and may get into Dave Creek during the spawning season. Actual fence construction is scheduled for the 2004 grazing season. Fences generally control cattle access to the East Fork of the Jarbidge and Jarbidge Rivers, however, fences do not guarantee that livestock will not access bull trout habitat in these waters or at critical times. Livestock trampling of redds in Dave Creek, could result in a high impact to the species because of the low bull trout population.

Wilkins Island Allotment

May Affect, Likely to Adversely Affect

All of the Wilkins Island Allotment lies within the Jarbidge River watershed. All water troughs are located with the Jarbidge River watershed. Grazing reduces the some of herbaceous cover that would become litter. The amount of additional sediment produced by grazing is likely to be negligible and discountable. Trailing livestock across the East Fork of the Jarbidge River and up a draw has affected the watershed, particularly the bottom of an unnamed draw. Although there is some fence that restricts livestock access to Dave Creek, in October 2002 livestock from this allotment were observed in the Dave Island Pasture of the Poison Butte Allotment. The grazing season in this allotment coincides with bull trout spawning. Livestock trampling of redds in Dave Creek, could result in a high impact to the species because of the low bull trout population.

Jim Bob Pipeline Operation

May Affect, Not Likely to Adversely Affect.

Rationale: Based upon limited flow monitoring data, it appears that the base flow of Jim Bob Creek is reduced by 0.18 cfs. Reduced flows in Jim Bob Creek may allow for some sediment to accumulate in pools that may otherwise be flushed out during the summer. This might affect embeddedness and pool depth in the lower reaches of Jim Bob Creek. The reduced water flow may also somewhat reduce pool depths slightly. BLM has no data to support these contentions. The possible impacts are likely negligible and discountable because the flow of Jim Bob Creek recharges downstream and overall flow at the confluence exceeds 1 cfs. Because warmer water is diverted in July and August, there is less potential temperature impact than the model predicted. The overall small size of Jim Bob Creek (1 m width, depth 0.16) makes it unlikely that bull trout spawn or reside in Jim Bob Creek.

CONSISTENCY WITH INFISH AND THE JARBIDGE RMP BIOLOGICAL OPINION

INFISH was originally implemented by BLM via Instruction Memorandum No. OR-96-010, on October 21, 1995, and was called the "Interim Bull Trout Habitat Conservation Strategy". BLM field units were directed to apply the strategy to all new projects and activities within watersheds that contain current bull trout habitat. All new projects and activities were to incorporate the strategy, but only so far as compliant with land use plans and NEPA requirements. This directive expired on September 30, 1997. On October 15, 1998, BLM conveyed a biological assessment of continued implementation of the Jarbidge Resource Area (RA) Resource Management Plan (RMP). In February, 2001 the US Fish and Wildlife Service issued a Biological Opinion titled: "EFFECTS TO BULL TROUT FROM CONTINUED IMPLEMENTATION OF THE BUREAU OF LAND MANAGEMENT JARBIDGE RESOURCE AREA RESOURCE MANAGEMENT PLAN, AS AMENDED BY THE INTERIM STRATEGY FOR MANAGING FISH-PRODUCING WATERSHEDS IN EASTERN OREGON AND WASHINGTON, IDAHO, WESTERN MONTANA, AND PORTIONS OF NEVADA (INFISH)". This Biological Opinion addresses the Jarbidge RA RMP, as modified by INFISH and therefore makes continued implementation of the INFISH strategy binding upon the agency. Any modification of the INFISH strategy to management of the Jarbidge basin would require re-initiation of Section 7 consultation on the Jarbidge RA RMP.

The Biological Opinion contains Terms and Conditions, including the following requirement with respect to INFISH:

> "Review, modify, and implement annual operating instructions or term grazing permits for those allotments/leases which encompass streams known or expected to contain bull trout addressed in this Biological Opinion to meet appropriate INFISH objectives."

Thus, INFISH is a critical management component of bull trout conservation in the Jarbidge Basin, and must be implemented in grazing permits.

Riparian Management Objectives (RMOs): INFISH established "riparian management objectives "(RMOs) for aquatic systems which currently contain bull trout or which affect downstream bull trout habitat. The RMO's include: pool frequency, water temperature, large woody debris, streambank stability, lower bank angle, and channel width/depth ratio,

RHCA's: For all perennial streams in the Jarbidge Basin, the RHCA(Riparian Habitat Conservation Area) consists of the stream and adjacent 100-year floodplain. For all intermittent streams in this same area, the RHCA includes the channel and the adjacent riparian area to the outer limits of riparian vegetation or 100 feet, whichever is greater. RHCAs are shown in Figure 12.

Standards and Guidelines: The Strategy also contains "Standards and Guidelines" (S&Gs) that are to be implemented in Riparian Habitat Conservation Areas (RHCAs) to meet the RMOs for conserving bull trout. Of relevance to livestock grazing, are Standards and Guidelines: GM-1 and GM-3.

> GM-1: "Modify grazing practices (e.g. accessibility of riparian areas to livestock, length of grazing season, stocking levels, timing of grazing, etc.) that retard or prevent attainment of Riparian Management Objectives or are likely to adversely affect bull trout. Suspend grazing if adjusting practices is not effective in meeting Riparian Management Objectives."
>
> GM-3: "Limit livestock trailing, bedding, watering, salting, loading, and other handling efforts to those areas and times that would not retard or prevent attainment of Riparian Management Objectives or adversely affect bull trout."

For livestock grazing, Standard GM1 requires that we modify grazing practices that "retard" or prevent attainment of Riparian Management Objectives (RMOs), or that would adversely affect bull trout. Grazing practices that are not effective in meeting these requirements must be suspended. RMOs most affected by livestock grazing are: Streambank stability and Lower Bank Angle (undercut banks). INFISH defines "retard attainment of RMOs" as: "..to slow the rate of recovery below the near natural rate of recovery if not additional human caused disturbance was placed on the stream". With respect to the term "retard" INFISH states: "this obviously will require professional judgement and should be based on watershed analysis of local conditions**."**

Watershed Analysis: INFISH standards are to be implemented, "...until such time more site specific management objectives and standards and guidelines can be developed." "The development of more site specific objectives and standards and guidelines using watershed analysis techniques described within are strongly encouraged." Also: "Field Managers are encouraged to establish site-specific RMOs through watershed analysis or site specific analysis."

Watershed Analysis would normally be implemented: "...where the interim RMOs and the interim RHCA widths do not adequately reflect specific watershed capabilities.." and to focus on "specific issues and management needs." This can include restoration and monitoring needs.

The scope and extent of a Watershed Analysis would generally be driven by the issues at hand, but the Field Manager has the final responsibility to determine how much time and effort would be expended on the analysis.

ESA CUMULATIVE EFFECTS

Combined effects of non-federal actions are summarized below.

<u>Fishing/Recreation use</u>

Because the area is used by the public from early summer to late fall, camping at the developed sites along the East Fork of the Jarbidge River will occur. Use of the camp sites along the East Fork of the Jarbidge River by the public will likely result in some

trampling of vegetation along the banks. Water temperatures in the Jarbidge River drop to the suitable range for bull trout in late September. Fishing season extends into November in the Idaho portion of the watershed. This may result in some bull trout being caught by anglers. BLM has noted an increase in OHV activity on the slopes near Murphy Hot Springs. BLM has no specific use data for the camp grounds, but believes that this dispersed recreation exceeds the permitted recreation.

Noxious weed control

Beside BLM other entities spray noxious weeds. Residents in Murphy Hot Springs likely spray noxious weeds on their private lands. Owyhee County or Three Creek Road District may also spray for noxious weeds along road rights-of-way. BLM does not regulate county or individual use of herbicides. There is a chance that some herbicide may enter the Jarbidge River from noxious weed control along the main roads or private property.

Roads

The road along the Jarbidge River continues to affect the hydraulics in the stream and opposite bank. General use of the roads increases dust, sediment and rock from the vehicles using the roads into the water (Trombulak and Frissell 2000). Roads are also the conduits by which exotic species and noxious weeds can be spread (Trombulak and Frissell 2000). Roads displace trees which decreases the amount of shade over the water. Roads also act as a source of contaminates to aquatic systems ranging from vehicle accidents to litter.

In addition to maintained roads, a large number of jeep trails (2 tracks) are present and the miles of these roads are increasing. When jeep trails occur on steeper slopes, water can concentrate in the tire path and result increased erosion. Because vegetation is more damaged and soils tend to compacted beneath the tire path, less water can infiltrate. Use of the jeep trails when soils are saturated may lead to more damage and gully formation. Use of jeep trails by the public during dry years also increases the risk of wild fires (e.g. from cigarettes, catalytic converters, or other factors).

Road Maintenance

Road maintenance is conducted by local agencies (Three Creek Road District and Elko County Highway Department). Additionally, some private landowners in the general area have equipment and may blade roads on their private lands (Diamond "A" and Wilkins Island). Cut banks along the Jarbidge Road are prone to some slumping and rocks rolling onto the road. Some trees adjacent to the road along the Jarbidge River exhibit scars from being hit by road equipment or large rocks. In some cases trees have been removed which affects bank stability, detritus deposition, and stream shade. At times woody vegetation along the road is sprayed or cut to improve visibility. Cutting shrubs reduces some of the detritus (leaf fall) into the Jarbidge River. Overspray of the chemical used on shrubs may reach the aquatic habitat. The bridge that crosses the Jarbidge River for the Buck Creek Road has holes in the deck and the existing abutments are set within the stream channel. This narrows the stream, increasing water velocity and changes the hydraulics downstream of this point (Trombulak and Frissell 2000).

Some roads have been maintained for which Jarbide Field Office could not document that right-of-way has been granted. Roads in this category include the Rowland Road, Deer Creek Grade, and other roads east of the Jarbidge River. In some cases maintenance has resulted in the spread of exotic annuals (cheatgrass, clasping leaf pepperweed, bur buttercup, etc.) and noxious weeds (black henbane, diffuse knapweed, field bindweed). These species favor more disturbed sites. Exotic annuals like cheatgrass tend to promote wild fires and move into native rangeland. Their expansion is slower in higher precipitation zones.

Grazing

The Forest Service authorizes grazing on a number of allotments. In the Jarbidge River watershed, the Forest Service allotments and some private lands are located in the upper portion of the watersheds. Sediment and nutrients from livestock grazing on these areas are transported downstream. Because these areas are grazed after the peak water flow, the sediment produced is likely to be retained or accumulate in the system from summer and into fall during lower water flows. The retention or accumulation of fines increases substrate embeddedness and at some level may impair oxygen exchange for eggs in redds. These affects are additive to the on site impacts that occur from grazing. Similarly lack of stream shading may allow water temperatures to warm to levels not suitable for bull trout rearing, before the water reaches BLM administered lands.

Interrelated and Interdependent effects of federal actions

Grazing on other Lands

In addition to grazing on BLM administered lands, livestock also graze on State and Private land. This livestock use is in addition to that made on BLM managed lands. Diamond "A", Wilkins Island and Poison Butte Allotments have pastures that are primarily private land along streams. Private land straddles the center portion of Dave Creek, downstream of the Humboldt National Forest boundary and above BLM lands on Wilkins Island. In the Diamond "A" Allotment private land occupies portions of Buck, Columbet, Corral, Cow, Deer, Dorsey and Sanovia Creeks between the forest boundary and BLM lands. Bull trout have been documented in both Dave Creek and Deer Creek. The Idaho Department of Lands authorizes grazing on state owned lands in Idaho within the Jarbidge River Watershed.

Trailing

Livestock trail across the East Fork of the Jarbidge and up an un-named draw to reach the Wilkins Island Allotment and Dave Island Pasture (up Morgan Draw) of the Poison Butte Allotment. Most of these same livestock trail across BLM land to reach allotments on Forest Service land or private land. Trailing in the un-named and Morgan Draws has lead to some site instability beyond normal grazing within trailing corridor in both draws. Trailing tends to reduce the amount of vegetative cover, result in soil compaction and terracing on hill sides. Reduced vegetative cover and compacted soils increase the run-off velocity.

MITIGATION

Permitted Recreation
No additional mitigation was identified for the current special use permits authorizing outfitters to operate within the Jarbidge River watershed.

Lands
Utilities: No additional mitigation measures were identified for any of the utility rights-of-ways.

Fire Suppression
The LSRD office will request that a resource advisor knowledgeable on this consultation be assigned to any fire that is in close proximity (within 0.5 miles) to any RHCAs. The Jarbidge Field Office will notify the Reno Field Office (FWS) of any fire the poses a threat to the riparian zone of potential bull trout spawning or rearing streams [focal habitat] (Dave Creek, Jack Creek, Deer Creek) or any fire near the Jarbidge River south to the Jarbidge Forks confluence. No specific mitigation measures were identified to allow the continued suppression of wild fire within the Jarbidge River watershed.

Noxious Weed Control
BLM will follow the label directions when spraying noxious weeds within the Jarbidge River watershed. Only those chemical approved for use near water will be used. BLM will continue to use a spray wand to individually treat noxious weeds within riparian zones. Manual methods and biological controls will be used on small infestations of non-rhizomatous noxious weeds. No additional mitigation measures have been identified for continued noxious weed control.

Grazing
A. Resource guidelines will be implemented on the following allotments: Diamond A, Inside Desert, Poison Butte, and Wilkins Island. The following are the resource specific guidelines.

1. Grazing on riparian herbaceous species is limited to leave a median stubble height on key species. Stream segments where the riparian zone was rated as Functional and Functional at risk (FAR) upward trend may be grazed to 4" median stubble height (upland species). Stream segments classified FAR downward trend, FAR no trend, nonfunctional would be managed to a median stubble height of $\geq$ 6" (Clary and Webster 1989). Key species may include but are not limited to: bluegrass species, small-wing sedge, wooly sedge, Nebraska sedge, and hairgrass). Baltic rush and spike rush are excluded as a key riparian species;
2. Nipping on current year's leaders on available twigs of key riparian browse species within reach not to exceed 50% (Winward 2000). Limiting the nipping of current year's leaders on available woody species should protect growth form, reproduction and age class structure. Key browse species may include but are not limited to: aspen, willows, rose, or currant;

3. Bank alteration not to exceed 10% (Cowley 2002) on known fish bearing streams. Manage livestock on known or suspected non-fish bearing streams so that no more than 20% of the stream bank is altered. These guidelines are subject to change after validation of fish presence or absence. [Key areas for all riparian monitoring will be in areas readily accessible to livestock.]
4. No more than an average of 40% use in the uplands in general on key forage species at key areas (Holechek 1988, Holechek et al. 1998, Holechek et al. 1999, Vallentine 2000). Key forage species may include but are not limited to: Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass, or bottlebrush squirreltail;
5. No more than 50% nipping in the uplands on key woody species at key areas. Key woody species may include but are not limited to: aspen, rose, chokecherry, currant, snowberry and/or sagebrush in important wildlife habitats. [Key areas for all upland monitoring will be in areas readily accessible to livestock Holechek et al 1998, Vallentine 2000].
6. In seedings, grazing use is limited to 50% on key seeded species in key areas. Key herbaceous seeded species includes crested wheatgrass and/or intermediate wheatgrass.
7. Only for the Dave's Island Pasture of the Poison Butte Allotment, a seasonal restriction will added to the grazing permit to authorize grazing on the BLM portion from June 15 through August 31. The initial gather should occur around August 25 and permittee would have until August 31 to remove all remaining livestock from the BLM portion of Dave's Island Pasture. This seasonal modification is to eliminate potential livestock trampling of bull trout redds and would occur even if grazing use is less than those set by the resource guidelines. Livestock found in the pasture after August 31 would be considered in trespass and would trigger the need for additional consultation. The seasonal restriction will be dropped once the identified mitigation fences in the Dave Island Pasture are constructed.

B. Additionally, BLM will construct a fence along the BLM/Private boundary on the Dave Island Pasture to better control livestock use on BLM administered lands and a wing fence to block livestock access to Dave Creek. A second fence will be constructed to form an exclosure on a portion of Morgan Draw. A fence will also be constructed along the BLM/FS boundary on Cougar Point to block livestock access from a FS allotment across BLM lands to the East Fork of the Jarbidge River. The E.A. and B.A. for these projects will be submitted to the FWS by September 30, 2003.

C. JFO staff will check fences along Dave Creek, Columbet Creek, East Fork of the Jarbidge River near Murphy Hot Springs, Cougar Point area, and other areas to ensure that the fences are maintained prior to August 1 annually.

D. JFO staff will monitor livestock use, check known and potential livestock access points into bull trout habitat. Specific areas to check include mouth of Columbet Creek, mouth of Poison Creek, Arch table north of Crater Hole) and the mouth of the Jarbidge River. If riparian resource guidelines are not being met, then BLM will work with the permit holder(s) to ensure the problem is solved. The Jarbidge Wilderness Final

Environmental Impact Statement (BLM 1987) allows for some limited fencing within the WSA.

Other Mitigation
BLM will place signs at the Bruneau Jarbidge ACEC boundary noting the closure of the area to OHV use. Rationale: OHV use on steep slopes creates conditions for accelerated erosion. The Jarbidge RMP (BLM 1987, page II-87) notes that motorized vehicles would be allowed only on designated roads within the Bruneau/Jarbidge ACEC.

BLM will place signs at locations along the East and West Fork of the Jarbidge noting the area is closed to fire wood cutting. Rationale: The removal of dead trees impairs the recruitment of large woody debris into the aquatic habitat.

Proposed Monitoring
JFO staff will continue to conduct the riparian IIT monitoring on Dave Creek, Jack Creek, Columbet Creek, and the East Fork of the Jarbidge Rivers. Deer Creek riparian zone will be added to the IIT monitoring effort. New monitoring locations will added as necessary.

JFO staff will continue to monitor range uplands for those pastures that contain bull trout focal habitat. Pasture that contain or are immediately adjacent to nodal or adjunct habitat will be monitored with less intensity. BLM staff will do periodic checks (use supervision) through out the year to ensure livestock are moved in accordance with the respective grazing plans.

Periodically (every 5 years), in coordination with the Effectiveness Monitoring Team, BLM will monitor the aquatic habitat in bull trout focal, adjunct and nodal habitats to determine if the base conditions remain static or have changed. The same reaches evaluated in previous years would be rechecked.

BLM will establish monitoring points in the bottoms of draws, per the IIT Implementation Monitoring protocol, that contain water sources or otherwise may be problems. BLM will monitor these locations in a timely manner following grazing. The following general locations have tentatively been identified.

Diamond "A":	Arch Spring (T14S, R08E, Section 17 NW)
	Larios Camp (T14S, R08E, Section 32 W1/2 SW)
	Columbet Creek (T16S, R08E, Section 26 NE)
	Columbet Creek (T16S, R09E, Section 05 NWSW)
	Dorsey Creek (T15S, R08E, Section 28 SE)
Poison Butte:	Morgan Draw (T47N, R58E, Section 13 NE)
	Unnamed Draw (T47N, R59E, Section 18 NE)
	Dave Creek (T47N, R58E, Section 12 NW
	Unnamed Draw (T47N, R59E, Section 05 SE)
Wilkins Island:	Unnamed Draw (T16S, R09E, Section 24 SESW)
	Unnamed Draw (T16S, R09E, Section 25 SW)

Inventory

BLM will collect aquatic baseline habitat data (pool frequency, pool size, pool quality, large woody debris, overhanging vegetation, under cut banks, stream bank stability, etc.) in the following streams: lower Jack Creek, lower Deer Creek, West Fork of the Jarbidge (above and below Buck Creek and two other locations), East Fork of the Jarbidge (above and below confluence of Dave Creek and one location downstream of Murphy Hot Springs) and Jarbidge mainstem (just below the Jarbidge Forks, above and below the confluence of Columbet, Dorsey, Cougar, and Poison Creeks and just upstream of the Jarbidge confluence with the Bruneau River). Data will complete baseline data collection by December 31, 2006. BLM will send summaries of the data to the FWS, Reno Field Office.

CONSERVATION MEASURES

Lands

Roads

Jarbidge Field Office staff has identified two areas where road debris (soil and rock) could be placed to minimize the material being deposited within the stream channel or the flood plain. On the West Fork Jarbidge the site is near the mouth of Rattlesnake Creek. On the East Fork of the Jarbidge the area in near Murphy Hot Springs. BLM will also meet with Three Creek Road District to make sure they know of these locations. BLM will also meet with Three Creek Road District to address the water bars and stabilize the gully adjacent to the Wilkins Island Road.

Habitat Improvement Projects

JFO will also prepare an E.A. and B.A. to thin Rocky Mountain juniper and place large woody debris in a section of Dave Creek. Placing large woody debris is expected to improve instream habitat quality in Dave Creek. Thinning the juniper is also expected to allow aspen to dominate the site. Riparian habitats with aspen dominating the overstory have a more diverse understory and provide more detritus to the water. This expected to improve aquatic invertebrates over time. Pending funding the project would be implemented by the summer of 2004.

JFO will prepare an E.A. and B.A. for placing large woody debris in the East Fork of the Jarbidge upstream of Murphy Hot Spring and planting black cottonwood in the riparian zone to improve habitat for bull trout. The project area extends from the private lands upstream about 2 miles. Pending funding the project would be initiated by 2006.

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